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97th Annual Research Report

Rice Research Station

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Crowley, Louisiana

2005

97th Annual Research Report

RICE RESEARCH STATION

Crowley, Louisiana

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INTRODUCTION

Research at the Rice Research Station, Crowley, Louisiana, is conducted by scientists with the LSU AgCenter's Louisiana Agricultural Experiment Station. The 2005 rice research program included breeding, biotechnology, variety testing, fertilization, soil and water management, cultural practices, weed control, insect control, disease investigations, rice drying, bird control in rice, and physiology studies. Crops grown in rotation with rice were evaluated relative to increasing the efficiency of land use. The aquaculture research program places emphasis upon production practices, forages, and multi-cropping of crawfish with agronomic crops. Another important area of work is the production and distribution of foundation seed. Although most research work was performed by members of the Rice Station faculty, several staff members from Baton Rouge conducted research at this station.

The research activities of this station include both fundamental and applied research, although the latter predominates because of the mission of the Rice Research Station. Research accomplishments and general progress of the Rice Station during 2005 are presented in this report representing the 97th Annual Research Report of the Rice Research Station, Louisiana Agricultural Experiment Station, LSU Agricultural Center.

In addition to research responsibilities of the Rice Research Station staff and cooperators, a large number of farmers, extension personnel, and others were trained and otherwise contacted during 2005. Approximately 450 people attended the annual Rice Research Station field day to view plots and participate in discussions of research findings. Field days also were conducted in Acadia, Evangeline, Jeff Davis, Richland, and Vermilion parishes. In addition, the staff participated in industry meetings, both on and off the station, and worked individually with farmers and others in solving immediate problems. Several thousand people received services from the Rice Research Station during 2005.

Projects at this station are conducted under the supervision of research scientists from the Rice Research Station and also by cooperating personnel from certain departments of the Louisiana Agricultural Experiment Station. Following the reports, station personnel and cooperators in 2005 are listed.

MONTHLY RAINFALL DATA
RICE RESEARCH STATION - CROWLEY, LA
2005

DATE	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	YEAR TOTAL
1		2.39		.04	.30				.27		.59		
2		.68		.03					1.30	.03		.05	
3			.19				.45						
4		.10					.20	.34		.06			
5	.05						.37	1.00				1.56	
6	.19					.30							
7				.23		3.40					.03		
8	.40		.40			.82	.30					.17	
9					.25			.22				.01	
10								.06					
11						.79							
12	.05			.34									
13	1.08												
14	.18	2.50			.05			.08					
15							.04	.20	.10			2.2	
16			.88			.04	.02	.05			1.12		
17			.19			.05	.74		.11			.04	
18						.08	.25					.27	
19							.46						
20											.01		
21			.40				.56				.03		
22			.02				.04	.45					
23			.03										
24		1.40											
25		.80							6.67			.78	
26				.68			.71	.15	1.65				
27											.96		
28			.12								.54		
29	.34				2.56								
30				1.50	1.20	.10							
31	.36		.09										
MONTH TOTAL	2.65	7.87	2.32	2.82	4.36	5.58	4.14	2.55	10.10	0.09	3.28	5.08	50.84
2004	6.40	6.85	1.16	5.96	14.90	11.60	3.71	2.70	1.23	6.93	8.75	3.32	73.51

RICE BREEDING

GENETIC IMPROVEMENT OF RICE FOR LOUISIANA PRODUCTION[1]

S.D. Linscombe, X.Y. Sha, K.F. Bearb, C.A. Conner, B.W. Theunissen, B.J. Henry, H.L. Hoffpauir, and X. Jin

INTRODUCTION

The primary objective of the Rice Breeding Project is the development of superior varieties for the Louisiana rice industry. The Breeding Project is developing improved genotypes of both long- and medium-grain types, which are both important in the state and region. The project is also placing major emphasis on the development of specialty purpose types.

In addition to the primary objective of varietal development, the Breeding Project also conducts other research that may have direct and/or indirect contributions on varietal development. Included here are studies on milling quality, mutation breeding, date of planting, incorporation of herbicide resistance into rice varieties for use in red rice control programs, and development of lines for crawfish forage production.

The 2005 rice breeding nursery included 94,000 breeding rows, 418 F_1 transplant populations, and 336 space planted F_2 populations. About 600 new crosses were made. On- and off-station testing included over 6,000 yield plots. Yield testing included the Cooperative Uniform Regional Rice Nursery, which contained 200 experimental lines and checks (54 Louisiana entries). The Commercial-Advanced test was conducted at the Rice Research Station and six off-station locations.

The preliminary yield testing program evaluated 825 lines (mainly of F_5 and F_6 generations), most for the first time. In addition to yield testing, these lines were also evaluated for seedling vigor, milling characteristics, quality parameters, and numerous other agronomic characteristics.

[1] This research is supported in part by funding provided by rice producers through the Louisiana Rice Research Board.

COOPERATIVE UNIFORM REGIONAL RICE NURSERY (URN)

Public rice breeders in the United States conduct cooperative yield nurseries in which experimental lines and commercial varieties are grown and evaluated at research locations in Arkansas, Louisiana, Mississippi, Texas, California, and Missouri. The nurseries are used to test the adaptation of entries in the diverse rice growing environments of the United States. The entries in the 2005 nursery included materials from Arkansas, California, Louisiana, Mississippi, and Texas.

A randomized complete block design was applied, with three replications for groups 1 to 4 and two replications for groups 5 to 7. All plots were drill-seeded on March 15 and harvested on August 10. The URN was conducted using standard agronomic practices with no fungicide applied. Yield and agronomic data from the 2005 URN nursery at the Rice Research Station are presented in tables 1 to 7.

Table 1. Agronomic and milling performance of 2005 Uniform Regional Nursery, Group 1, Crowley, LA.

Entry	RU #	Pedigree	Grain Type*	Vigor †	Days to 50% Heading	Plant Height (in)	Lodging (%)	Grain Yield (lb/A @ 12%)			Milling Yield (%)	
								Main	Ratoon	Total	Whole	Total
014	RU0404154	8603006/3/MARS/NWRX//TBNT	L	5	88	41		9701	2356	12057	59.6	68.8
018	RU0202008	TRENASSE	L	5	85	43		9607	1103	10710	60.4	66.0
011	RU0402011	61764DH3	M	5	89	43	13	9268	1260	10528	59.6	65.0
006	RU0503006	((NWBT/RU8303181)/RSMT))TX7129/CCDR	L	4	92	43		8726	1412	10138	61.8	70.2
013	RU0301121	L201//TBNT/BLMT/3/JDON	L	5	90	39		8922	1121	10043	62.7	69.0
020	CYBT	CYBONNET	L	5	94	39		8899	913	9812	64.5	69.2
017	FRNS	FRANCIS	L	5	93	41		8972	836	9807	58.7	67.9
019	RU9903092	PRESIDO (PRSD)	L	6	93	39		7793	1985	9779	63.4	69.1
010	RU0101099	RU8201176/4/LBNT/STBN//NWBT/3/MILL	L	5	93	44		8461	1313	9775	64.6	71.0
005	RU0302005	TACAURI/3/CPRS//82CAY21/TBNT	L	5	92	38		8948	714	9662	58.7	69.3
007	RU0401087	NWBT/3/LBNT/9902//LBLE/4/LGRU	L	5	97	40		8164	1367	9531	55.0	70.5
009	RU0503009	((NWBT/RU8303181)/RSMT))TX7129/CCDR	L	6	92	36		8528	922	9450	63.6	69.3
012	RU0503012	((NWBT/RU8303181)/RSMT))TX7129/CCDR	L	6	93	41		8205	1115	9320	60.2	69.9
002	RU0402097	9502008-A//AR 1188/CCDR	L	5	90	40		8822	381	9204	63.1	69.4
008	RU0402103	9502008//KATY/902207x2	L	4	93	41		8707	494	9201	65.5	70.6
003	RU0503003	((NWBT/RU8303181)/RSMT))TX7129/CCDR	L	6	94	39		8050	967	9018	64.6	70.9
015	RU0404100	TBNT/LA110//LMNT/3/TBNT	L	7	96	36		7877	998	8875	62.3	72.3
001	RU0301081	NWBT/3/LBNT/9902//LBLE/4/DREW	L	6	100	46		7545	1298	8843	63.8	70.6
004	RU0101093	SPRING	L	6	96	41		6516	2026	8542	58.0	68.3
016	RU0404033	CPRS/3/L201//TBNT/BLMT	L	6	93	39		7585	375	7961	64.4	71.1
c.v.%				12.4	1.5	3.3		5.0	26.1	5.0	3.3	1.9
$LSD_{0.05}$				1.1	2.2	2.2		705	495	789	4.3	2.7

*L = Long grain; M = Medium grain.

† Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

Table 2. Agronomic and milling performance of 2005 Uniform Regional Nursery, Group 2, Crowley, LA.

Entry	RU #	Pedigree	Grain Type*	Vigor †	Days to 50% Heading	Plant Height (in)	Lodging (%)	Grain Yield lb/A @ 12%			Milling Yield (%)	
								Main	Ratoon	Total	Total	Whole
022	RU0502022	CPRS/KBNT//9502008-A	L	4	89	39		10170	751	10921	60.8	68.1
031	RU0502031	BNGL//MERC/RICO/3/MERC/RICO//BNGL	M	5	90	36		9423	1406	10829	64.5	70.4
028	RU0402028	BNGL//MERC/RICO/3/MERC/…	M	5	92	36		9562	1221	10783	61.2	70.3
037	RU0202183	JUPITER	M	6	94	37		9460	1117	10577	66.1	71.2
033	RU0404191	8603006/3/MARS/NWRX//TBNT	L	5	93	41		9643	842	10485	61.7	70.1
036	RU0404194	8603006/3/MARS/NWRX//TBNT	L	5	91	41		9353	606	9959	61.9	70.9
039	MDRK	MEDARK	M	5	94	37	27	8943	876	9819	63.6	67.9
038	PI561735	BENGAL	M	4	93	40		9204	574	9778	63.4	71.0
030	RU0401127	BRAZ/TBNT/3/164986-4/NV66//NTAI/4/BNGL/…	M	6	91	35		8584	1040	9624	64.0	69.5
027	RU0301105	RU9201176/3/KATY//TBNT/NWRX	L	5	94	46	10	8784	727	9510	61.9	69.1
025	RU0402131	JSMN/DLLA//CPRS/KDM	L(A)	5	89	38		7632	1843	9476	63.9	71.7
034	RU0502034	CCDR/JEFF	L	5	91	40		8911	442	9354	60.6	67.6
024	RU0401136	BRAZ/TBNT/3/164986-4/NV66//NTAI/4/BNGL/5/…	M	6	93	33		8631	379	9010	63.9	71.0
035	RU0404074	8904865S919/NWBT	L	5	93	45		8012	560	8572	61.6	69.6
032	RU0203032	JEFF/(VSTA/LBNT//L201/3/SKBT)RU9404077	L	6	92	45		8259	264	8522	62.8	70.4
026	RU0103184	(CPRS/PELDE)/JEFF	L	6	96	40		8161	322	8483	65.9	70.0
040	SABN	SABINE (SABN)	L	6	95	40		8064	368	8432	63.0	69.8
029	RU0403089	(CPRS/PANDA)/JEFF*2	L	6	89	37		7794	634	8428	64.4	69.4
021	RU0401084	BRAZ/TBNT/3/164986-4/NV66//NTAI/4/BNGL/5/…	M	6	88	37	90	7513	848	8361	62.3	67.3
023	RU0403126	(CPRS/PANDA)/JEFF*2	L	7	92	38		7150	512	7662	60.7	67.3
c.v.%				13.0	1.5	3.4		6.4	22.5	6.8	2.7	1.9
$LSD_{0.05}$				1.2	2.3	2.2		921	285	1060	3.5	2.8

*L = Long grain; M = Medium grain; and L(A) = Long grain aromatic.

† Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

Table 3. Agronomic and milling performance of 2005 Uniform Regional Nursery, Group 3, Crowley, LA.

Entry	RU #	Pedigree	Grain Type*	Vigor †	Days to 50% Heading	Plant Height (in)	Lodging (%)	Grain Yield (lb/A @ 12%)			Milling Yield (%)	
								Main	Ratoon	Total	Whole	Total
042	RU0402042	AC110DH2/AC108DH2	L	5	93	41		10258	958	11216	59.5	69.9
057	RU9404036	PRISCILLA	L	5	92	41		8672	1637	10309	59.5	68.5
044	RU0301044	LBNT/9902//NWBT/3/KATY/NWBT/4/LGRU	L	5	98	44		8875	1287	10163	58.1	67.9
045	RU0302082	9502008-A/DREW	L	5	91	40		9353	626	9979	62.8	70.5
053	RU0104055	L201//TBNT/BLMT	L	5	93	39		8123	1776	9899	61.9	70.7
050	RU0301050	LBNT/9902//NWBT/3/KATY/NWBT/4/DREW	L	4	97	44	10	8989	802	9791	62.1	70.7
048	RU0502048	CCDR/4/CPRS/3/MBLE//LMNT/…	L	5	91	38		9223	344	9567	61.3	67.6
047	RU0401145	L201//TBNT/BLMT/3/CPRS	L	5	91	38		8761	786	9548	61.4	66.8
059	PI606331	COCODRIE	L	5	92	40		9140	304	9444	61.1	69.2
060	DREW	DREW	L	4	99	49		8085	1099	9184	56.0	65.6
051	RU0402128	0043752/0047277	L	5	90	40	13	8772	269	9042	63.5	69.9
041	RU0301041	LMNT//82CAY21/CICA8/3/DLMT/4/…	L	5	98	45		7717	1121	8838	62.9	69.3
055	RU0304077	V7817/SKBT	L	4	96	37		7950	259	8209	64.2	72.7
046	RU0503046	(RSMT/RU8703196//TQNG)TX7063/CCDR	L	5	96	44		7451	688	8138	62.9	71.0
058	RU0002174	CHENIERE	L	6	95	37	10	7854	209	8062	66.0	72.4
052	RU0103104	Texmont/TeQing	L	5	96	35		6818	1001	7819	60.7	69.4
043	RU0403166	Kaybonnet/Zhongyouzao3	L	6	99	36		6566	1030	7596	61.8	70.0
049	RU0503049	((NWBT/RU8303181)/RSMT))TX7129/CCDR	L	5	96	38		7180	346	7526	60.5	68.4
054	RU0404193	8804032/KATY	L	5	99	35		5481	492	5973	64.5	70.4
056	RU9603178	SABER (SABR)	L									
c.v.%				10.0	1.2	2.6		6.4	18.1	5.9	4.4	1.9
$LSD_{0.05}$				0.8	1.8	1.7		869	236	879	5.7	2.8

*L = Long grain.

† Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

Table 4. Agronomic and milling performance of 2005 Uniform Regional Nursery, Group 4, Crowley, LA.

Entry	RU #	Pedigree	Grain Type*	Vigor †	Days to 50% Heading	Plant Height (in)	Lodging (%)	Grain Yield (lb/A @ 12%)			Milling Yield (%)	
								Main	Ratoon	Total	Whole	Total
062	RU0402091	9863910DH2/AR 1053	L	4	93	43		9341	837	10179	58.5	69.3
080	WLLS	WELLS	L	4	96	42		8660	1370	10030	60.8	71.4
075	RU0503075	JEFF/((NWBT/RU8303181)/RSMT))TX7147	L	5	93	41		8646	1222	9869	59.5	67.2
077	RU0504077	VSTA/LBNT//L201/3/SKBT	L	5	99	40		7945	1812	9756	61.3	71.4
065	RU0402065	9502008-A/DREW	L	5	89	41		9237	369	9606	60.6	68.1
061	RU0201133	941009	L	6	99	44		8300	1265	9565	59.4	68.9
079	BNKS	BANKS	L	5	98	45		8716	798	9514	57.2	67.9
071	RU0402149	AC101DH2/AC102DH2	L	5	97	39		8338	899	9237	65.4	71.6
076	RU0301188	961237	L	5	99	48		7586	1444	9030	57.6	67.0
067	RU0401067	BRAZ/TBNT/3/164986-4/NV66//NTAI/4/BNGL/…	M	5	87	35		7767	1232	8999	67.2	71.9
070	RU0401111	LBNT/9902/3/DAWN/9695//STBN/4/LGRU/5/DREW	L	6	95	43		8364	546	8910	58.0	67.8
068	RU0502068	CCDR/JEFF	L	5	89	39		8376	219	8595	63.6	70.4
072	RU0503072	JEFF/((NWBT/RU8303181)/RSMT))TX7147	L	5	94	40		7814	671	8485	61.8	68.2
066	RU0503066	((NWBT/RU8303181)/RSMT))TX7144/JEFF	L	4	97	43		7811	366	8177	60.5	69.4
069	RU0503069	(RSMT/RU8703196//TQNG)TX7063/CCDR	L	5	93	42	17	7673	381	8053	63.6	70.4
064	RU0401105	KATY/STBN//9101001/5/LGRU//LMNT/RA73/…	L	6	99	47		7277	734	8011	58.8	68.8
074	RU0504074	8804032/KATY	L	6	98	39		6863	1137	8000	64.3	72.1
078	RU0403078	PSCL/JEFF	L	6	89	37		6928	957	7885	57.2	66.4
073	RU0504073	CPRS/3/L201//TBNT/BLMT	L	4	93	40		7532	158	7689	66.4	71.1
063	RU0203181	Kaybonnet/Zhongyouzao3	L	5	98	35		6799	759	7558	62.8	70.1
c.v.%				9.4	1.4	3.7		6.5	26.8	7.4	4.1	2.4
$LSD_{0.05}$				0.8	2.1	2.5		860	380	1081	5.2	3.5

*L = Long grain; M = Medium grain.

† Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

Table 5. Agronomic and milling performance of 2005 Uniform Regional Nursery, Group 5, Crowley, LA.

Entry	RU #	Pedigree	Grain Type*	Vigor †	Days to 50% Heading	Plant Height (in)	Lodging (%)	Grain Yield (lb/A @ 12%)			Milling Yield (%)	
								Main	Ratoon	Total	Whole	Total
102	RU0501102	LGRU2/DREW	L	4	93	45		10344	1903	12247	64.4	70.9
105	RU0501105	9101001/86179/6/RNS3/5/IR36M4/4/L201/3/…	L	4	94	48		9723	1780	11503	62.2	69.8
108	RU0501108	DREW/PI 560243	L	4	88	44		9303	1394	10697	61.8	70.2
096	RU0501096	L201/7402003//KATY/NWBT/3/LGRU	L	5	96	45		9409	1089	10498	58.8	68.7
094	RU0502094	CCDR/9770532DH2	L	5	91	40		9293	883	10176	63.1	68.7
117	PI606331	COCODRIE	L	5	93	39		9646	431	10077	62.6	68.9
104	RU0503104	(CPRS/92:1021(KATY//GFMT/PCOS))RU9803175/…	L	6	92	41		8367	1706	10074	62.8	69.0
112	RU0502112	TACAURI//KBNT/LCSN	L	6	97	37		8882	1189	10071	67.8	73.4
092	RU0503092	((NWBT/RU8303181)/RSMT))TX7129/CCDR	L	5	90	41		8930	1139	10069	65.6	71.0
115	RU0502115	DREW/CCDR	L	5	91	40		9301	668	9969	65.7	69.7
097	RU0502097	9502008-A//AR 1142/MBLE	L	5	97	35		8289	1627	9916	66.7	72.1
103	RU0502103	9502008-A//AR 1142/MBLE	L	5	92	38		9208	681	9889	63.8	70.4
095	RU0503095	(CPRS/92:1021(KATY//GFMT/PCOS))RU9803175/…	L	5	93	41		8329	1470	9799	63.5	70.1
099	RU0501099	WLLS/PI 584698//ZHE 733	L	6	94	42		8261	1485	9746	62.6	71.8
088	RU0502088	AC125DH2/AC4311DH2	L	5	94	45		9242	475	9717	62.1	69.7
098	RU0503098	((NWBT/RU8303181)/GFMT))TX7181/CCDR	L	6	96	41		7975	1734	9709	59.7	70.2
111	RU0501111	LBNT/9902/3/DAWN/9695//STBN/4/LGRU/5/WLLS	L	6	97	44		8029	1569	9598	60.1	71.2
109	RU0502109	CPRS/LGRU//LGRU	L	5	96	41		8972	624	9596	64.3	71.9
106	RU0502106	9502008-A/DREW	L	5	97	37		8034	1469	9503	64.1	70.2
084	RU0501084	DREW/UA99-52	L	5	90	40		8407	997	9404	62.2	69.5
091	RU0502091	AC110DH3/0043752	L	5	90	40		9044	332	9377	64.1	69.9
113	RU0503113	(CPRS/92:1021(KATY//GFMT/PCOS))RU9803175/…	L	6	91	40		7890	1269	9159	63.4	68.9
087	RU0501087	WLLS/ZHE733	L	5	86	39		8106	1024	9130	64.1	70.7
101	RU0103101	(CPRS/PELDE)/JEFF	L	6	91	39		8439	588	9027	66.5	71.7
116	RU0503116	MDSN/((NWBT/RU8303181)/RSMT))TX7129	L	6	92	42		8211	778	8989	59.5	70.2
100	RU0504100	CPRS/JKSN	L	6	93	34		8409	555	8964	62.6	72.3
093	RU0501093	LBNT/9902/3/DAWN/9695//STBN/4/LGRU/5/CCDR	L	6	90	35		8586	377	8964	68.6	74.2
081	RU0501081	19991562	L	5	90	44	75	7929	982	8912	63.0	68.3
085	RU0502085	0047272/0046181	L	6	93	40		8235	613	8849	65.5	70.7
082	RU0402085	0043676/AC105DH3	L	6	93	39		7515	1299	8815	61.2	68.6
119	PI608664	L205	L	4	87	40	25	7499	1207	8706	63.9	70.2
089	RU0503089	((NWBT/RU8303181)/RSMT))TX7129/CCDR	L	5	94	40		7931	656	8587	67.2	73.3
110	RU0503110	(CPRS/92:1021(KATY//GFMT/PCOS))RU9803175/…	L	6	92	40	10	7726	809	8534	61.4	68.2
086	RU0003178	(CPRS/PELDE)/JEFF	L	5	90	38		7801	697	8498	62.7	69.4
107	RU0503107	(GFMT/RU8703196)TX6141/CCDR	L	6	93	41		7086	1177	8263	60.4	70.7
083	RU0504083	CPRS/JKSN	L	6	94	32		7557	490	8047	66.5	72.3
118	RU0003009	HIDALGO (HDLG)	L	5	88	40		7633	384	8017	61.8	68.9
114	RU0504114	82CAY21/LMNT/3/L201//TBNT/BLMT	L	5	91	36		7610	307	7917	65.5	71.5
090	RU0501090	91642//KATY/NWBT/5/RU9201176/4/KATY/…	L	5	87	41		7082	644	7726	63.7	67.2
120	PI595900	DIXIEBELLE (DXBL)	L	7	92	36		4776	1358	6134	62.6	69.7
c.v.%				12.4	1.5	3.3		5.0	26.1	5.0	3.3	1.9
$LSD_{0.05}$				1.1	2.2	2.2		705	495	789	4.3	2.7

*L = Long grain.
†Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

Table 6. Agronomic and milling performance of 2005 Uniform Regional Nursery, Group 6, Crowley, LA.

Entry	RU #	Pedigree	Grain Type*	Vigor †	Days to 50% Heading	Plant Height (in)	Lodging (%)	Grain Yield (lb/A @ 12%) Main	Ratoon	Total	Milling Yield (%) Whole	Total
145	RU0501145	PI 584720/ZHE 733	L	6	90	39		7823	3785	11607	53.5	66.0
143	RU0302143	MBLE//TQNG/MBLE (MCR02YT-1534)	L	5	89	45		9622	1896	11518	58.9	65.4
134	RU0502134	BNGL/MERC/RICO/3/MERC/RICO//BNGL	M	5	91	39		10313	1166	11479	64.7	71.3
131	RU0502131	MERC/RICO//BNGL/3/SMARS/SMARS/…	M	4	94	42		9993	1459	11452	63.9	70.6
152	RU0402152	YD-4/RSMT	L	5	90	43		9394	1768	11163	59.2	65.6
137	RU0502137	MERC/RICO//BNGL/3/SMARS/MARS/…	M	4	93	40		10785	258	11044	61.7	70.1
125	RU0502125	MERC/RICO//BNGL/3/SMARS/SMARS/…	M	4	93	40		10111	904	11016	66.2	72.4
140	RU0502140	MERC/RICO//BNGL/3/SMARS/MARS/…	M	4	94	39		9925	873	10798	63.4	71.5
139	RU0501139	SHUFENG 121-1655	L	6	98	45	45	8966	1821	10787	57.7	69.7
146	RU0502146	SMARS/MARS//…/3/MERC/RICO//BNGL	M	5	93	39		9204	1463	10667	64.4	71.9
160	FRNS	FRANCIS	L	5	94	42		9598	616	10213	61.2	68.8
133	RU0501133	KATY/NWBT//L201/7402003/3/WLLS	L	5	95	43		8527	1397	9924	63.6	71.8
154	RU0504154	VSTA/LBNT//L201/3/SKBT	L	5	92	41		9224	620	9844	62.3	70.9
159	PI561735	BENGAL	M	4	92	39		9268	574	9842	63.7	70.2
149	RU0502149	CCDR/9770532DH2	L	5	91	41		9240	564	9805	65.1	70.4
148	RU0401148	NWBT/3/LBNT/9902//LBLE/4/NWBT/KATY	L	5	98	48		8427	1165	9592	57.9	68.5
128	RU0502128	AC425DH2/AC636DH1	L	5	91	43		8809	673	9482	64.5	70.7
155	RU0502155	MCR 03-007	L	6	94	41		8930	536	9465	54.2	70.1
150	RU0503150	((NWBT/RU8303181)/GFMT))TX7181/CCDR	L	6	94	40		7723	1707	9430	61.4	70.0
126	RU0503126	((NWBT/RU8303181)/RSMT))TX7144/JEFF	L	5	100	40		7340	2007	9347	65.1	70.5
142	RU0501142	BASMATI/KATY/4/VSNTLM//L201/9NRZ/3/KATY/	L	5	95	47		8081	1229	9310	61.3	68.9
141	RU0503141	(CPRS/92:1021(KATY//GFMT/PCOS))RU9803175/…	L	6	91	40		8122	1183	9305	65.3	71.5
123	RU0503123	((NWBT/RU8303181)/RSMT))TX7144/JEFF	L	5	96	43		8625	647	9272	62.1	69.8
136	RU0501136	STG99F5-13-025/MDRK	M	6	90	38		8414	758	9172	55.7	70.8
157	RU0504157	CPRS/3/L201//TBNT/BLMT	L	5	93	39		8426	413	8839	67.3	71.9
153	RU0503153	(CPRS/92:1021(KATY//GFMT/PCOS))RU9803175/…	L	6	93	39		7690	1099	8790	66.0	70.5
132	RU0403132	((NWBT/RU8303181)/RSMT))TX7129/JEFF	L	5	93	45		8294	474	8768	63.3	70.7
151	RU0501151	MDRK/UA99-123	M	6	94	37		7969	711	8680	63.6	70.2
147	RU0503147	MDSN/((NWBT/RU8303181)/RSMT))TX7129	L	5	92	41		7007	1606	8613	62.1	69.6
130	RU0501130	DREW/UA99-52	L	5	91	39		7379	1176	8555	58.0	68.4
144	RU0503144	(CPRS/92:1021(KATY//GFMT/PCOS))RU9803175/…	L	6	93	39		8091	421	8512	62.8	69.2
135	RU0503135	MDSN/((NWBT/RU8303181)/RSMT))TX7129	L	6	92	43		7622	857	8478	59.1	70.6
129	RU0303129	(CPRS/PANDA)/JEFF*2	L	7	88	35		7405	936	8341	66.0	71.0
122	RU0504122	CPRS/3/L201//TBNT/BLMT	L	5	92	41		7696	517	8213	67.7	72.5
124	RU0501124	CPRS/RU9201176//WLLS	L	5	96	35		6168	1915	8082	67.4	72.9
156	RU0505156	CPRS/3/L201//TBNT/BLMT	L	5	92	40		7661	321	7982	66.5	70.9
138	RU0503138	MDSN/((NWBT/RU8303181)/RSMT))TX7129	L	6	92	39		7302	661	7964	61.6	71.1
127	RU0501127	MDRK/PI 430439	M	6	91	38		6394	1360	7753	63.3	70.7
158	PI593241	DELLROSE	L(A)	7	93	42		6077	1626	7703	64.6	70.6
121	RU0501121	MDRK/PI 430439	M	5	91	42		6303	914	7217	67.7	71.8
c.v.%				9.5	1.1	3.4		5.6	28.8	5.6	3.5	1.7
$LSD_{0.05}$				1.0	2.1	2.8		938	641	1075	4.5	2.4

*L = Long grain; M = Medium grain; and L(A) = Long grain aromatic.
†Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

Table 7. Agronomic and milling performance of 2005 Uniform Regional Nursery, Group 7, Crowley, LA.

Entry	RU #	Pedigree	Grain Type*	Vigor †	Days to 50% Heading	Plant Height (in)	Lodging (%)	Grain Yield (lb/A @ 12%)			Milling Yield (%)	
								Main	Ratoon	Total	Whole	Total
200	RT XP 723	XP 723	L	5	90	46	35	9769	3233	13002	61.5	69.4
198	RU0504198	RSMT/KATY	L	4	91	41		8602	2430	11032	63.5	69.4
182	RU0401182	DREW/5/NWBT/3/DAWN/9695//STBN/4/KATY/…	L	4	96	46		9168	1663	10831	63.6	69.3
186	RU0504186	8603006/3/MARS/NWRX//TBNT	L	5	94	45		8862	1686	10549	58.3	66.8
172	RU0203172	(MARS/CM101)/(LBNT_WX/RU8703190)	L	7	96	42		8389	1749	10138	64.3	68.1
173	RU0501173	LBNT/9902/3/DAWN/9695//STBN/4/LGRU/5/WLLS	L	4	95	40		9133	1003	10136	57.4	69.0
199	PI561734	CYPRESS	L	5	95	40		9334	723	10057	65.4	69.3
176	RU0501176	LBNT/9902/3/DAWN/9695//STBN/4/LGRU/5/WLLS	L	5	96	44		8813	1224	10037	59.8	69.7
196	RU0504196	CPRS/3/L201//TBNT/BLMT	L	5	93	41		8937	857	9793	66.3	70.4
164	RU0401164	LBNT/9902/3/DAWN/9695//STBN/4/LGRU/5/WLLS	L	5	96	48		8425	1307	9732	53.8	68.6
162	RU0502162	MCR03-2771	M	5	90	40		7668	2015	9683	56.5	69.0
165	RU0502165	CCDR//LGRU/LCSN	L	5	91	35		8607	1065	9672	64.0	70.9
161	RU0501161	DLMT//KATY/NWBT/4/NWBT/3/LBNT/9902//LBLE	L	5	94	44		8773	895	9667	61.2	69.5
181	RU0503181	(GFMT/RU8703196)TX6141/CCDR	L	6	94	43		7694	1969	9662	60.0	71.0
183	RU0502183	JSMN/DLLA//96SP287	L(A)	6	92	36		8613	993	9606	59.0	70.1
167	RU0501167	NWBT/3/LBNT/9902//LBLE/4/DREW	L	5	97	43		8270	1264	9534	58.4	69.0
191	RU0504191	8603006/3/MARS/NWRX//TBNT	L	5	89	41		8037	1351	9388	60.4	68.3
197	RU0504197	CPRS/3/L201//TBNT/BLMT	L	5	95	42		8347	1036	9383	65.4	69.9
169	RU0503169	((NWBT/RU8303181)/GFMT))TX7181/CCDR	L	6	95	41		7910	1341	9251	61.7	70.4
171	RU0502171	CCDR/4/CPRS/3/MBLE//LMNT/…	L	5	91	40		8862	365	9226	61.2	66.9
177	RU0502177	96SP287/95B8472	L(A)	5	91	41		7618	1564	9182	60.4	69.3
189	RU0502189	9502008-A//AR 1188/CCDR	L	5	90	39		8536	425	8961	63.0	70.1
184	RU0503184	((NWBT/RU8303181)/GFMT))TX7181/CCDR	L	6	95	42		7068	1860	8928	59.1	68.9
174	RU0502174	KATY/CPRS//JKSN/3/AR 1188/CCDR	L	5	92	40		8541	359	8901	62.1	69.0
168	RU0502168	LGRU/LCSN	L	5	90	41		8599	301	8899	64.7	70.0
179	RU0401179	KBNT LPA1-1/BBLE	L	5	96	52		7541	1285	8826	56.9	66.7
195	RU0502195	9502008/CPRS//9502008/LGRU	L	5	97	40		7813	960	8773	61.1	67.4
163	RU0503163	((NWBT/RU8303181)/GFMT))TX7181/CCDR	L	7	93	38		7533	1235	8768	61.9	70.3
166	RU0503166	(CPRS/92:1021(KATY//GFMT/PCOS))RU9803175/…	L	6	93	39		8046	694	8740	62.0	68.3
188	RU0501188	INDICA 13	L	6	100	49	90	7194	1248	8442	55.7	68.0
192	RU0502192	CPRS/KBNT//9502008	L	5	91	40		7613	829	8442	67.0	70.9
175	RU0503175	(GFMT/RU8703196)TX6141/CCDR	L	6	97	43		7333	1109	8442	59.1	67.7
178	RU0503178	(GFMT/RU8703196)TX6141/CCDR	L	6	99	39		6974	1454	8428	60.1	69.7
180	RU0502180	JSMN/DLLA//DLLA	L(A)	5	92	40		7942	460	8402	62.8	68.9
193	RU0504193	CPRS/3/L201//TBNT/BLMT	L	5	92	39		8142	223	8366	66.6	70.9
185	RU0501185	INDICA 12	L	6	100	52	85	6667	1618	8284	50.5	66.2
187	RU0503187	(CPRS/92:1021(KATY//GFMT/PCOS))RU9803175/…	L	7	96	23		7492	490	7982	61.8	69.0
170	RU0501170	NWBT/3/LBNT/9902//LBLE/4/LGRU	L	6	100	40		6100	1483	7583	58.1	66.3
194	RU0504194	A301/KATY	L(A)	5	92	38		6009	1466	7474	60.5	67.7
190	RU0503190	((NWBT/RU8303181)/GFMT))TX7181/CCDR	L	6	99	45		5678	1540	7218	58.1	68.8
c.v.%				8.9	1.0	2.5		8.8	46.1	9.2	7.0	2.2
$LSD_{0.05}$				0.9	1.9	2.1		1421	1136	1713	8.6	3.0

*L = Long grain; M = Medium grain; and L(A) = Long grain aromatic.
†Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

COMMERCIAL-ADVANCED TESTS

In order to evaluate the adaptability, stability, and performance of potential rice varieties, the Rice Breeding Project annually conducts yield trials on commercial rice varieties and advanced experimental lines at several locations throughout the rice growing regions of Louisiana.

In 2005, these tests were conducted at the Rice Research Station and six on-farm test sites in Evangeline, Jeff Davis, Morehouse, Richland, and Vermilion parishes (two sites). Some of these locations were conducted in cooperation with the Rice Fertilization Project.

Sixty entries were tested in 2005 (Table 8). Standard agronomic practices were used for each individual location. A randomized complete block design with three replications was applied for these tests. Seeding dates were: Rice Research Station, March 15; Evangeline, April 11; Jeff Davis, March 10; Morehouse, April 28; Richland, May 5; Vermilion (Lake Arthur), March 30; and Vermilion (Pine Island), April 5. Harvesting dates were: Rice Research Station, August 8; Evangeline, August 25; Jeff Davis, August 3; Morehouse, September 12; Richland, September 13; Vermilion (Lake Arthur), August 9; and Vermilion (Pine Island), August 23. Results from these studies are shown in tables 9 to 15.

Table 8. Entries of the Commercial-Advanced (CA) yield tests, 2005.

Entry	Pedigree	Grain Type*	Source**
201	CL131	L	LAES
202	CL161	L	LAES
203	CFX-26/9702128	L	LAES
204	TRENASSE	L	LAES
205	COCODRIE	L	LAES
206	CHENIERE	L	LAES
207	CYPRESS	L	LAES
208	WELLS	L	AAES
209	BANKS	L	AAES
210	CYBONNET	L	AAES
211	MEDARK	M	AAES
212	JUPITER	M	LAES
213	BENGAL	M	LAES
214	PIROGUE	S	LAES
215	PRESIDIO	L	TAES, USDA
216	9101001//TBNT/KATY/3/LGRU	L	AAES
217	0402008-A HR	L	LAES
218	TACAURI//KBNT/LCSN	L	LAES
219	DREW/CCDR	L	LAES
220	TACAURI/3/CPRS//82CAY21/TBNT	L	LAES
221	CPRS/KBNT//9502008-A	L	LAES
222	CCDR/JEFF	L	LAES
223	CCDR/4/CPRS/3/MBLE//LMNT/…	L	LAES
224	CCDR/JEFF	L	LAES
225	9502008-A/DREW	L	LAES
226	9502008-A//AR 1142/MBLE	L	LAES
227	9502008-A//AR 1142/MBLE	L	LAES
228	9502008-A/DREW	L	LAES

Continued.

Table 8. Continued.

Entry	Pedigree	Grain Type*	Source**
229	9502008-A/DREW	L	LAES
230	9502008-A//AR 1188/CCDR	L	LAES
231	9502008//KATY/902207x2	L	LAES
232	CPRS/LGRU//LGRU	L	LAES
233	BNGL//MERC/RICO/3/MERC/RICO//BNGL	M	LAES
234	BNGL//MERC/RICO/3/MERC/…	M	LAES
235	MERC/RICO//BNGL/3/SMARS/SMARS/…	M	LAES
236	MERC/RICO//BNGL/3/SMARS/MARS/…	M	LAES
237	SMARS/MARS//…/3/MERC/RICO//BNGL	M	LAES
238	61764DH3	M	LAES
239	AC110DH2/AC108DH2	L	LAES
240	0043752/0047277	L	LAES
241	9863910DH2/AR 1053	L	LAES
242	AC101DH2/AC102DH2	L	LAES
243	0043676/AC105DH3	L	LAES
244	0047272/0046181	L	LAES
245	AC125DH2/AC4311DH2	L	LAES
246	AC110DH3/0043752	L	LAES
247	CCDR/9770532DH2	L	LAES
248	AC425DH2/AC636DH1	L	LAES
249	JSMN/DLLA//CPRS/KDM	L(A)	LAES
250	96SP287/95B8472	L(AE)	LAES
251	JSMN/DLLA//96SP287	L(A)	LAES
252	MBLE//TQNG/MBLE	L	LAES
253	CCDR//LGRU/LCSN	L	LAES
254	LGRU/LCSN	L	LAES
255	CCDR/2/CPRS/3/MBLE/LMNT	L	LAES
256	XP723	L	RiceTec
257	CLEARFIELD XL8	L	RiceTec
258	CL XP730	L	RiceTec
259	XP 721	L	RiceTec
260	XP 716	M	RiceTec

* L = Long grain, M = Medium grain, and S = Short grain (A = Aromatic, E = Elongating).

** AAES, Rice Research and Extension Center, Arkansas Agricultural Experiment Station, Stuttgart, AR; LAES, Rice Research Station, Louisiana Agricultural Experiment Station, LSU Agricultural Center, Crowley, LA; TAES, USDA, Texas A&M Research and Education Center, Texas Agricultural Experiment Station, U.S. Department of Agriculture, Beaumont, TX; and RiceTec, RiceTec Inc., Alvin, TX.

Table 9. Agronomic performance of 2005 Commercial-Advanced test, Evangeline Parish, LA.

Entry	Source	Vigor*	Days to 50% Heading	Plant Height (inch)	Yield (lb/A @ 12%)	Narrow Bown†	Blast‡	Panicle Blight§
256	XP723	6	80	43	12290	0	0	1
258	CL XP730	6	82	46	11694	0	0	1
260	XP 716	7	88	44	11204	0	0	1
257	CLEARFIELD XL8	6	81	44	9880	0	0	1
241	RU0402091	4	79	44	9383	0	3	2
232	RU0502109	5	86	39	8588	2	1	3
227	RU0502103	5	79	35	8525	5	4	3
221	RU0502022	5	80	36	8496	4	2	4
228	RU0302082	5	82	38	8341	1	2	2
238	RU0402011	6	80	38	8327	1	1	2
246	RU0502091	5	78	39	8205	5	3	4
240	RU0402128	5	80	39	8172	5	4	4
252	RU0302143	5	74	38	8143	3	5	3
247	RU0502094	5	79	38	8123	5	3	3
254	RU0502168	5	80	38	8082	5	3	3
244	RU0502085	6	82	39	8038	4	2	4
235	RU0502125	5	82	35	7987	1	1	3
242	RU0402149	5	81	37	7978	5	4	4
255	RU0502171	5	77	35	7935	6	3	4
230	RU0402097	5	79	37	7918	4	3	3
239	RU0402042	5	79	36	7865	1	2	3
209	BANKS	6	85	43	7857	0	1	2
229	RU0502106	5	80	35	7843	3	3	3
222	RU0502034	5	80	37	7779	3	2	4
220	RU0302005	5	80	36	7693	6	3	2
225	RU0402065	5	79	38	7633	5	4	3
203	CLPY 003	5	80	39	7632	5	4	5
226	RU0502097	4	85	35	7604	4	2	2
248	RU0502128	5	80	39	7581	4	3	4
224	RU0502068	5	79	35	7558	4	3	4
245	RU0502088	5	83	41	7515	6	4	2
234	RU0402028	5	86	33	7500	0	2	3
218	RU0502112	5	85	34	7374	4	2	2
205	COCODRIE	5	82	36	7335	5	3	4
212	JUPITER	7	85	35	7262	1	1	1
206	CHENIERE	6	81	37	7251	6	5	3
233	RU0502031	6	82	35	7238	0	0	4
208	WELLS	5	84	41	7186	0	4	5
223	RU0502048	5	79	38	7115	5	4	4
216	RU0101093	4	73	40	7034	3	5	3
217	0402008-A HR	5	74	38	6965	3	2	2
259	XP 721	8	84	38	6950	0	0	2
219	RU0502115	5	78	35	6930	5	5	3
204	TRENASSE	5	75	36	6925	5	4	4
210	CYBONNET	5	80	38	6922	4	3	3

Continued.

Table 9. Continued.

Entry	Source	Vigor*	Days to 50% Heading	Plant Height (inch)	Yield (lb/A @ 12%)	Narrow Bown†	Blast‡	Panicle Blight§
253	RU0502165	5	82	32	6921	6	3	5
231	RU0402103	5	82	36	6867	7	5	4
236	RU0502140	5	84	33	6852	0	1	3
213	BENGAL	4	85	36	6763	1	2	5
250	RU0502177	5	79	36	6415	3	5	3
214	PIROGUE	7	83	37	6403	0	1	2
202	CL161	5	84	38	6128	5	5	4
237	RU0502146	6	85	34	6117	0	2	3
215	RU9903092	5	82	36	6077	0	2	2
207	CYPRESS	5	83	37	6060	5	4	5
201	CL131	5	79	32	5961	6	5	5
243	RU0402085	7	84	34	5757	4	2	4
211	MEDARK	5	82	35	5675	0	1	3
251	RU0502183	6	83	37	5372	0	1	3
249	RU0402131	6	82	32	4803	5	4	5
c.v. %		11.0	2.3	5.0	10.6	34.8	31.5	23.2
$LSD_{0.05}$		0.9	3.0	3.0	1296	1.7	1.5	1.5

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.
†Narrow brown leaf spot rating 0-9, where 0 = no disease, 9 = maximum disease possible.
‡Rotten neck blast rating 0-9, where 0 = no disease, 9 = maximum disease possible.
§Panicle blight rating 0-9, where 0 = no disease, 9 = maximum disease possible.

Table 10. Agronomic and milling performance of 2005 Commercial-Advanced test, Jeff Davis Parish, LA.

Entry	Source	Seedling Vigor*	Days to 50% Heading	Plant Height (inch)	Yield (lb/A @ 12%)	Milling Yield (%)		Sheath Blight†
						Whole	Total	
260	XP 716	6	93	44	9525	63.0	70.1	5.0
258	CL XP730	6	86	42	9454	61.3	73.1	6.0
256	XP723	5	83	41	9347	54.9	72.9	6.7
209	BANKS	5	88	42	9259	58.8	69.5	5.7
259	XP 721	6	80	41	9234	54.8	73.1	6.7
238	RU0402011	5	88	40	9097	58.9	67.3	7.3
257	CLEARFIELD XL8	5	86	41	8980	59.1	72.9	6.7
212	JUPITER	5	91	37	8728	61.2	67.9	6.0
233	RU0502031	5	90	36	8704	64.2	71.6	7.3
252	RU0302143	4	83	40	8605	58.7	67.9	7.3
246	RU0502091	5	85	35	8421	58.2	73.2	7.7
241	RU0402091	4	87	44	8230	63.4	72.2	8.0
214	PIROGUE	6	87	43	8101	63.9	70.2	6.3
208	WELLS	4	88	40	8081	60.6	71.8	6.3
234	RU0402028	4	92	37	7889	63.3	70.1	7.3
232	RU0502109	5	90	38	7855	60.9	70.3	7.0
235	RU0502125	4	92	37	7784	61.5	70.3	7.0

Continued.

Table 10. Continued.

Entry	Source	Seedling Vigor*	Days to 50% Heading	Plant Height (inch)	Yield (lb/A @ 12%)	Milling Yield (%)		Sheath Blight†
						Whole	Total	
230	RU0402097	5	86	35	7623	61.4	70.4	8.0
221	RU0502022	5	87	34	7621	62.2	70.3	8.0
237	RU0502146	4	90	38	7608	60.0	67.8	7.7
228	RU0302082	5	86	35	7565	60.4	70.6	8.0
242	RU0402149	5	90	34	7519	60.3	72.1	7.3
223	RU0502048	5	86	36	7382	63.1	71.9	7.7
224	RU0502068	5	85	36	7375	58.2	66.3	8.0
203	CLPY 003	4	86	37	7330	59.9	68.1	7.3
205	COCODRIE	5	88	35	7275	61.9	70.3	7.7
206	CHENIERE	6	89	35	7217	60.7	71.8	7.0
213	BENGAL	4	93	38	7205	62.8	69.2	7.0
239	RU0402042	5	88	36	7199	61.6	70.1	7.7
240	RU0402128	5	88	36	7162	60.7	69.5	8.0
216	RU0101093	4	80	42	7082	62.6	71.8	8.0
236	RU0502140	4	92	39	7055	62.0	69.1	7.3
204	TRENASSE	5	79	36	7054	61.6	69.3	7.3
248	RU0502128	5	87	35	7011	59.4	68.0	8.0
210	CYBONNET	5	87	34	6953	63.5	69.6	7.0
253	RU0502165	5	86	31	6925	65.1	72.3	8.0
202	CL161	5	91	37	6857	62.9	67.2	7.7
225	RU0402065	5	87	34	6853	61.3	71.0	8.0
254	RU0502168	5	85	36	6836	58.5	70.6	7.7
247	RU0502094	5	87	37	6821	60.9	70.0	8.0
207	CYPRESS	5	90	38	6792	61.5	69.9	8.0
217	0402008-A HR	6	81	37	6791	62.7	70.4	8.0
219	RU0502115	5	85	34	6781	60.6	67.9	7.7
244	RU0502085	6	88	36	6696	58.8	68.3	8.0
211	MEDARK	5	91	36	6693	62.9	69.2	6.3
231	RU0402103	4	89	35	6668	60.0	68.1	8.0
226	RU0502097	5	90	35	6634	59.3	72.0	7.7
218	RU0502112	5	92	34	6583	60.8	70.6	8.0
222	RU0502034	5	87	36	6565	59.4	69.0	8.0
229	RU0502106	5	91	33	6550	59.2	67.9	7.7
249	RU0402131	6	85	33	6510	63.0	73.2	8.0
255	RU0502171	5	85	36	6368	60.6	70.8	7.7
251	RU0502183	6	89	34	6331	50.0	68.7	7.7
245	RU0502088	5	89	39	6300	59.7	70.0	8.0
215	RU9903092	5	87	38	6270	64.0	72.7	6.7
220	RU0302005	5	85	33	6207	52.8	68.1	8.0
201	CL131	4	87	30	6191	62.4	68.9	8.7
227	RU0502103	5	86	34	6184	58.4	70.8	8.0
243	RU0402085	6	88	33	6124	60.5	68.7	8.0
250	RU0502177	5	86	36	5551	47.3	75.6	8.3
c.v. %			1.3	4.9	8.0	4.1	2.7	6.1
$LSD_{0.05}$		0.8	1.9	2.9	949	5.0	3.8	0.7

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.
†Sheath blight rating 0-9, where 0 = no disease, 9 = maximum disease possible.

Table 11. Agronomic and milling performance of 2005 Commercial-Advanced test, Vermilion Parish (Lake Arthur), LA.

Entry	Source	Seedling Vigor*	Days to 50% Heading	Plant Height (inch)	Yield (lb/A @ 12%)	Milling (%) Whole	Milling (%) Total	Sheath Blight†	Blast‡
256	XP723	6	82	46	8968	59.9	71.1	6.0	2.0
258	CL XP730	5	83	49	8963	56.6	68.5	5.3	1.7
259	XP 721	6	73	45	8822	56.6	67.9	5.0	2.3
252	RU0302143	5	79	45	8600	56.6	63.2	6.3	3.7
254	RU0502168	4	79	42	8599	63.5	70.0	7.0	3.3
246	RU0502091	5	80	41	8515	62.7	70.1	6.7	4.0
221	RU0502022	5	80	40	8491	61.4	70.2	7.0	3.3
257	CLEARFIELD XL8	5	83	49	8486	54.7	67.5	6.7	1.7
227	RU0502103	4	80	41	8454	63.3	70.9	7.0	4.3
260	XP 716	6	87	52	8373	57.9	67.4	4.3	2.3
240	RU0402128	5	82	44	8357	59.9	68.2	7.3	4.3
204	TRENASSE	5	75	44	8329	56.0	67.4	6.7	3.3
247	RU0502094	5	80	43	8203	62.7	68.6	6.0	4.7
230	RU0402097	5	80	41	8193	62.5	70.0	7.0	4.0
238	RU0402011	5	83	47	8164	61.3	69.0	4.7	3.7
235	RU0502125	5	84	41	8099	63.3	69.9	5.0	4.0
224	RU0502068	5	80	40	8053	59.4	68.7	6.3	4.3
210	CYBONNET	4	82	41	7911	64.4	71.0	6.3	4.3
220	RU0302005	5	81	39	7826	50.6	64.6	6.0	2.7
248	RU0502128	4	81	44	7826	65.2	70.6	6.7	2.3
219	RU0502115	5	80	39	7774	55.8	64.9	7.0	4.0
205	COCODRIE	5	83	41	7688	57.2	67.7	6.7	4.3
239	RU0402042	4	81	42	7676	60.7	70.8	7.7	3.7
244	RU0502085	5	81	40	7671	62.5	68.7	7.0	3.3
241	RU0402091	5	83	49	7546	51.8	65.7	5.7	3.0
255	RU0502171	5	79	41	7525	57.9	66.1	7.3	4.0
225	RU0402065	5	81	41	7501	60.3	68.5	7.3	3.3
203	CLPY 003	5	80	43	7424	57.9	68.3	6.7	5.7
222	RU0502034	5	81	38	7416	59.2	67.3	7.7	3.7
223	RU0502048	5	79	43	7399	59.5	67.5	6.3	3.7
218	RU0502112	5	85	37	7331	60.2	69.8	7.0	3.0
212	JUPITER	5	85	43	7312	59.9	65.6	5.0	1.7
206	CHENIERE	5	85	40	7211	60.0	70.2	5.7	3.0
208	WELLS	4	83	45	7173	56.7	68.7	5.7	5.7
232	RU0502109	5	86	43	7168	54.2	66.9	6.0	3.3
228	RU0302082	5	81	40	7163	59.5	70.0	7.7	2.7
233	RU0502031	5	84	41	7157	57.9	68.5	5.7	7.0
217	0402008-A HR	5	74	43	7028	54.5	63.8	7.0	2.3
216	RU0101093	3	73	44	6982	61.4	70.1	6.7	3.3
201	CL131	4	81	36	6922	56.7	66.2	6.7	5.0
245	RU0502088	5	81	45	6875	58.0	68.5	6.7	2.7
209	BANKS	5	87	49	6864	52.3	65.3	5.0	4.7
253	RU0502165	5	83	35	6779	57.2	69.1	6.7	6.3
226	RU0502097	5	84	40	6688	59.7	68.6	7.7	4.0
207	CYPRESS	5	85	43	6670	54.9	65.6	6.3	5.0
231	RU0402103	4	85	42	6622	61.4	70.6	6.3	4.0

Continued.

Table 11. Continued.

Entry	Source	Seedling Vigor*	Days to 50% Heading	Plant Height (inch)	Yield (lb/A @ 12%)	Milling (%) Whole	Milling (%) Total	Sheath Blight†	Blast‡
234	RU0402028	5	85	40	6589	59.6	67.5	5.7	4.0
202	CL161	5	87	43	6367	59.3	68.2	7.0	3.3
211	MEDARK	4	85	41	6188	58.7	68.3	6.7	4.3
243	RU0402085	6	84	38	6154	54.0	65.1	6.7	5.7
215	RU9903092	5	81	42	6061	61.0	67.3	6.3	5.7
237	RU0502146	5	85	44	5974	57.5	68.8	6.0	5.7
242	RU0402149	6	83	39	5967	55.3	67.9	6.0	7.0
229	RU0502106	5	84	38	5903	58.0	66.7	7.3	4.0
214	PIROGUE	6	86	46	5827	59.3	66.8	4.7	3.0
213	BENGAL	4	85	43	5549	56.1	66.2	5.7	6.0
236	RU0502140	5	85	42	5499	56.1	66.6	5.7	5.3
251	RU0502183	5	86	39	5442	54.8	67.9	5.7	3.0
249	RU0402131	6	84	39	5156	51.3	67.3	6.3	5.0
250	RU0502177	5	82	41	4970	57.0	69.4	6.0	5.0
C.V. %		10.9	1.7	3.7	7.2	4.9	2.8	13.5	26.6
$LSD_{0.05}$		0.9	2.2	2.5	849	5.7	3.9	1.4	1.7

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.
†SB = Sheath blight rating 0-9, where 0 = no disease, 9 = maximum disease possible.
‡Rotten neck blast rating 0-9, where 0 = no disease, 9 = maximum disease possible.

Table 12. Agronomic performance of 2005 Commercial-Advanced test, Morehouse Parish, LA.

Entry	Source	Days to 50% Heading	Height (inch)	Lodging (%)	Yield (lb/A @ 12%)
256	XP723	79	48	7	9748
260	XP 716	81	51	17	9005
258	CL XP730	80	52	37	8834
257	CLEARFIELD XL8	81	47		8465
238	RU0402011	75	42	13	8175
259	XP 721	73	44	73	8161
204	TRENASSE	76	42	40	8037
224	RU0502068	78	37		7732
235	RU0502125	80	37		7727
212	JUPITER	81	37		7695
237	RU0502146	82	38		7682
213	BENGAL	80	38		7483
246	RU0502091	82	40		7472
203	CLPY 003	80	39		7449
211	MEDARK	79	34		7372
236	RU0502140	81	36		7338
254	RU0502168	80	40		7305
234	RU0402028	81	35		7299
233	RU0502031	80	35		7269
225	RU0402065	79	38		7234

Continued.

Table 12. Continued.

Entry	Source	Days to 50% Heading	Height (inch)	Lodging (%)	Yield (lb/A @ 12%)
221	RU0502022	80	37		7223
239	RU0402042	80	37		7148
223	RU0502048	78	40		7145
205	COCODRIE	81	38		7134
227	RU0502103	82	37		7108
229	RU0502106	80	40		7083
240	RU0402128	82	41		7064
252	RU0302143	75	42	50	7017
230	RU0402097	80	39		6985
219	RU0502115	80	39		6931
214	PIROGUE	76	37		6898
208	WELLS	83	40		6868
209	BANKS	85	44		6861
255	RU0502171	79	41		6826
222	RU0502034	80	39		6742
220	RU0302005	82	37		6741
206	CHENIERE	84	36		6711
216	RU0101093	73	42	77	6708
241	RU0402091	81	42		6579
247	RU0502094	82	42		6571
245	RU0502088	81	43		6532
249	RU0402131	80	37		6525
232	RU0502109	84	39		6467
228	RU0302082	82	39		6462
253	RU0502165	82	35		6433
207	CYPRESS	84	39		6420
244	RU0502085	81	37		6406
215	RU9903092	79	38		6357
231	RU0402103	83	39		6349
217	0402008-A HR	76	42	57	6282
210	CYBONNET	83	37		6222
201	CL131	81	33		6219
248	RU0502128	82	41		6215
218	RU0502112	84	35		6101
202	CL161	85	39		6095
226	RU0502097	85	35		5702
250	RU0502177	80	39		5690
242	RU0402149	83	39		5655
243	RU0402085	82	37		5615
251	RU0502183	79	36	10	5510
C.V. %		1.2	3.8		7.1
$LSD_{0.05}$		1.5	2.4		804

Table 13. Agronomic performance of 2005 Commercial-Advanced test, Vermilion Parish (Pine Island), LA.

Entry	Source	Days to 50% Heading	Plant Height (inch)	Yield (lb/A @ 12%)
256	XP723	83	46	8646
258	CL XP730	82	51	8352
241	RU0402091	89	45	6366
240	RU0402128	85	42	6295
230	RU0402097	84	42	6136
248	RU0502128	87	42	6130
257	CLEARFIELD XL8	84	45	6125
260	XP 716	88	48	6048
239	RU0402042	85	42	6045
227	RU0502103	84	39	5970
225	RU0402065	84	42	5917
246	RU0502091	86	42	5794
232	RU0502109	87	41	5785
222	RU0502034	83	40	5751
203	CLPY 003	84	38	5730
247	RU0502094	83	42	5701
224	RU0502068	83	39	5624
209	BANKS	90	44	5596
221	RU0502022	84	43	5580
254	RU0502168	84	44	5558
210	CYBONNET	83	41	5534
244	RU0502085	86	41	5532
218	RU0502112	85	37	5468
220	RU0302005	85	39	5450
235	RU0502125	87	38	5221
242	RU0402149	86	39	5165
223	RU0502048	83	40	5126
205	COCODRIE	84	41	5043
234	RU0402028	87	38	5010
213	BENGAL	86	39	4991
231	RU0402103	84	39	4980
204	TRENASSE	80	41	4966
245	RU0502088	86	40	4960
208	WELLS	87	41	4919
206	CHENIERE	87	38	4895
229	RU0502106	83	39	4843
212	JUPITER	86	37	4840
202	CL161	90	39	4748
255	RU0502171	84	41	4742
226	RU0502097	84	40	4739
228	RU0302082	84	40	4702
207	CYPRESS	90	40	4694
219	RU0502115	83	39	4644
253	RU0502165	86	36	4615
217	0402008-A HR	80	41	4408
238	RU0402011	83	38	4323
236	RU0502140	87	39	4096
237	RU0502146	87	39	3869

Continued.

Table 13. Continued.

Entry	Source	Days to 50% Heading	Plant Height (inch)	Yield (lb/A @ 12%)
233	RU0502031	85	39	3858
215	RU9903092	83	39	3853
201	CL131	81	38	3822
250	RU0502177	86	37	3788
249	RU0402131	84	38	3433
251	RU0502183	87	35	3276
211	MEDARK	86	35	3139
252	RU0302143	82	40	3038
214	PIROGUE	87	36	2871
243	RU0402085	87	31	1676
216	RU0101093	82	40	1525
259	XP 721	84	35	1476
C.V. %		2.4	5.9	19.5
$LSD_{0.05}$		3.2	3.8	1553

Table 14. Agronomic performance of 2005 Commercial-Advanced test, Richland Parish, LA.

Entry	Source	Days to 50% Heading	Height (inch)	Lodging (%)	Yield (lb/A @ 12%)
256	XP723	74	47		8623
260	XP 716	78	46		8528
258	CL XP730	75	46	5	8266
259	XP 721	70	42	83	8220
240	RU0402128	77	39		7892
235	RU0502125	76	34		7880
241	RU0402091	78	38		7641
257	CLEARFIELD XL8	77	43		7536
213	BENGAL	77	35		7507
220	RU0302005	79	33		7505
254	RU0502168	77	39		7468
227	RU0502103	78	33		7459
221	RU0502022	78	35		7449
239	RU0402042	77	36		7429
244	RU0502085	77	38		7420
224	RU0502068	76	36		7355
203	CLPY 003	76	35		7297
222	RU0502034	77	37		7259
205	COCODRIE	77	36		7195
217	0402008-A HR	73	39	3	7179
230	RU0402097	77	37		7178
237	RU0502146	79	33		7160
219	RU0502115	76	37		7137
233	RU0502031	77	33		7114
229	RU0502106	76	36		7092

Continued.

Table 14. Continued.

Entry	Source	Days to 50% Heading	Height (inch)	Lodging (%)	Yield (lb/A @ 12%)
223	RU0502048	76	37		7056
206	CHENIERE	80	36		7055
246	RU0502091	76	37		7053
226	RU0502097	83	35		6953
209	BANKS	82	40		6941
225	RU0402065	77	37		6939
214	PIROGUE	79	36		6922
238	RU0402011	74	37		6917
245	RU0502088	78	39		6901
211	MEDARK	76	33		6894
247	RU0502094	76	37		6884
236	RU0502140	78	32		6853
228	RU0302082	79	38		6843
208	WELLS	78	38		6834
234	RU0402028	77	32		6802
232	RU0502109	81	35		6777
202	CL161	81	38		6761
255	RU0502171	76	37		6749
204	TRENASSE	72	37		6716
249	RU0402131	80	35		6678
218	RU0502112	81	33		6613
201	CL131	78	32		6581
212	JUPITER	80	32		6544
242	RU0402149	79	36		6535
207	CYPRESS	80	35		6457
253	RU0502165	79	32		6421
248	RU0502128	76	38		6357
231	RU0402103	80	36		6285
250	RU0502177	75	38		6218
210	CYBONNET	79	35		6134
215	RU9903092	76	35		5997
251	RU0502183	76	36		5760
243	RU0402085	80	33		5206
252	RU0302143	72	40		5157
216	RU0101093	71	40		3621
C.V. %		1.3	3.9		8.8
$LSD_{0.05}$		1.7	2.3		983

Table 15. Agronomic and milling performance of 2005 Commercial-Advanced test, Rice Research Station, Crowley, LA.

Entry	Source	Seedling Vigor*	Days to 50% Heading	Plant Height (inch)	Yield (lb/A @ 12%)			Milling (%)	
					Main	Ratoon	Total	Whole	Total
256	XP723	5	89	46	11771	3908	15679	65.2	73.2
260	XP 716	5	93	50	10558	3333	13891	68.2	71.8
258	CL XP730	5	90	48	9994	3386	13380	60.6	71.4
259	XP 721	6	83	42	9181	3130	12311	59.9	72.1
204	TRENASSE	5	85	40	9421	2402	11823	61.2	68.9
257	CLEARFIELD XL8	5	90	48	9709	2034	11743	55.6	69.7
233	RU0502031	6	92	36	9426	2253	11678	67.0	73.7
241	RU0402091	4	90	44	9530	2090	11620	59.7	72.2
239	RU0402042	5	93	40	9729	1660	11389	60.2	70.3
216	RU0101093	4	82	44	8211	3124	11335	64.1	72.8
221	RU0502022	5	90	38	9644	1613	11257	60.8	71.1
217	0402008-A HR	5	85	42	9244	1960	11205	59.7	68.3
228	RU0302082	5	89	41	9739	1361	11100	63.7	72.9
234	RU0402028	4	94	37	8924	2050	10974	64.3	72.8
252	RU0302143	5	90	43	8831	2090	10921	57.5	67.4
212	JUPITER	6	94	39	9152	1665	10816	63.3	70.8
250	RU0502177	5	90	40	8417	2382	10800	56.3	72.5
248	RU0502128	4	92	43	9212	1585	10797	62.4	71.3
226	RU0502097	5	96	36	8632	2071	10704	65.8	73.5
211	MEDARK	5	92	38	8775	1841	10617	65.7	71.6
227	RU0502103	4	90	37	9252	1318	10570	64.5	72.7
232	RU0502109	5	94	40	9072	1479	10551	67.3	72.7
225	RU0402065	5	90	41	9677	760	10437	60.3	69.3
238	RU0402011	5	90	41	9222	1164	10386	62.4	69.1
235	RU0502125	5	93	39	9332	1053	10385	65.2	71.7
220	RU0302005	5	92	36	8873	1488	10362	57.8	69.4
245	RU0502088	5	93	45	9479	865	10344	64.5	72.3
203	CLPY 003	5	90	40	9385	744	10128	62.8	70.1
246	RU0502091	5	90	41	9346	762	10107	65.1	73.1
219	RU0502115	5	90	40	8951	1140	10091	63.1	71.3
224	RU0502068	5	91	39	9374	710	10084	61.2	70.9
209	BANKS	5	97	45	8855	1206	10061	57.2	70.4
247	RU0502094	5	92	40	8981	1064	10045	62.0	71.1
236	RU0502140	4	94	39	8567	1463	10030	65.3	70.9
255	RU0502171	5	90	42	9121	869	9990	61.6	70.0
240	RU0402128	5	91	42	9455	486	9940	61.8	71.1
205	COCODRIE	5	91	40	9302	591	9893	64.0	71.4
218	RU0502112	6	96	36	7625	2245	9870	61.0	72.1
244	RU0502085	6	92	39	9047	809	9855	64.5	72.9
215	RU9903092	5	91	39	7199	2646	9845	61.6	71.0
254	RU0502168	5	90	40	9272	569	9841	63.7	73.1
223	RU0502048	5	90	41	8736	1045	9782	62.1	70.5
237	RU0502146	4	92	38	8800	981	9781	60.9	72.6
242	RU0402149	5	94	37	8157	1527	9683	67.3	74.1
210	CYBONNET	5	94	38	8570	1085	9655	63.8	71.8
208	WELLS	5	97	42	7918	1715	9633	59.5	71.8
253	RU0502165	5	91	35	8095	1524	9619	64.5	71.3

Continued.

Table 15. Continued.

Entry	Source	Seedling Vigor*	Days to 50% Heading	Plant Height (inch)	Yield (lb/A @ 12%)			Milling (%)	
					Main	Ratoon	Total	Whole	Total
201	CL131	5	91	36	8889	728	9617	65.6	70.7
249	RU0402131	5	87	37	7073	2513	9585	64.3	73.4
230	RU0402097	5	90	39	8826	626	9453	61.8	72.3
222	RU0502034	5	91	39	8759	596	9354	63.3	71.1
202	CL161	5	95	43	8813	525	9338	65.4	70.6
213	BENGAL	4	93	40	8488	735	9222	64.5	71.8
214	PIROGUE	6	90	37	7726	1345	9071	59.0	69.9
229	RU0502106	5	95	36	7358	1695	9053	61.8	70.8
231	RU0402103	5	94	41	8371	568	8938	66.7	73.5
243	RU0402085	6	94	34	7340	1313	8653	60.7	69.8
251	RU0502183	7	93	36	6956	1658	8613	47.5	69.4
206	CHENIERE	6	95	38	8195	307	8502	63.2	73.4
207	CYPRESS	5	96	40	7308	701	8009	63.9	72.6
C.V. %		9.6	1.4	3.7	6.1	22.3	6.1	4.7	2.6
$LSD_{0.05}$		0.8	2.0	2.4	874	542	1028	5.9	3.7

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

PRELIMINARY YIELD TESTS

The preliminary yield tests provide the first stage of yield testing of promising experimental lines, which include both replicated (PY) and non-replicated (SP) tests, depending on the priority and/or seed availability. The more promising line selections will be advanced for additional testing.

The tests were conducted using standard agronomic practices (except that no fungicides were applied) at the Rice Research Station at Crowley, LA. Either a randomized complete block or a complete randomized design was applied to arrange test entries. The plot size was 4.66 x 16 foot. Seeding rate was 100 pounds per acre. This test was drill-seeded on March 30 and harvested on August 12-13. The source of all entries was listed below:

Test	Entry No.	Type and Source
PY	501-750	Long grain
PY	751-850	Anther culture
PY	851-900	Medium grain
PY	901-925	Specialty
SP	001-125	Long grain
SP	126-225	Anther culture
SP	226-325	Medium grain
SP	326-400	Specialty

For long-grain PY or SP entries, yield test data were presented in tables 16 to 26 of this section. However, yield test results of anther culture and medium-grain/specialty entries were presented in doubled haploid breeding and medium-grain and specialty rice breeding section, respectively.

Table 16. Agronomic and milling performance of 2005 preliminary yield test, Group 1, long-grain entries. Rice Research Station, Crowley, LA.

Entry	Pedigree	Vigor*	Days to 50% Heading	Plant Height (in)	Grain Yield (lb/A @ 12%)			Milling Yield (%)		Blast†	SB‡
					Main	Ratoon	Total	Whole	Total		
523	9502008/CPRS//WELLS	5	85	37	8931	2456	11387	65.7	72.5	4.5	5.5
525	TRENASSE	5	76	39	8973	1826	10799	63.2	70.4	4.0	7.5
519	CPRS/KBNT//9502008-A	5	84	38	8931	1830	10762	64.9	71.0	2.0	6.5
516	KATY/CPRS//JKSN/3/AR 1188/CCDR	5	83	38	9102	1655	10757	65.1	72.8	3.5	6.0
507	CPRS/LGRU	5	87	40	8414	2323	10737	67.7	71.5	5.5	5.5
511	CCDR/3/KATY/CPRS//JKSN	5	82	39	9206	1525	10731	64.6	70.4	2.0	7.0
512	CCDR/JEFF	5	82	38	9649	1081	10731	65.9	71.9	3.0	7.5
520	AR 1188/CCDR//AR 1142/LA 2031	5	82	39	9303	1352	10656	68.0	72.0	2.0	8.0
514	9502008-A//AR 1142/MBLE	5	87	35	8846	1787	10633	67.4	72.7	2.5	6.0
513	CCDR/9502008-A	5	82	38	9329	1296	10624	64.4	71.4	3.0	6.0
524	LGRU//CCDR 9770532 DH2	5	85	37	8634	1941	10575	66.3	71.8	2.0	6.5
503	9502008/CPRS	5	85	40	8898	1633	10531	66.7	72.4	5.5	6.5
501	9502008-A//AR 1188/CCDR	5	82	39	9294	1227	10521	68.0	73.2	3.0	7.0
515	CCDR/3/KATY/CPRS//JKSN	5	82	38	8950	1503	10453	63.8	69.0	3.5	7.5
509	CCDR/JEFF	5	82	37	9598	834	10432	63.7	68.8	2.5	7.5
506	CPRS/9502008-A	5	84	36	9162	1241	10403	67.9	73.1	5.0	7.0
521	CPRS//NWBT/KATY/3/KBNT	5	86	37	7956	2262	10218	68.9	72.9	4.0	5.5
522	CCDR/3/CPRS/NWBT//KATY	5	86	38	7615	2540	10155	67.5	72.0	2.5	4.5
517	CPRS/9502008-A	5	83	37	8937	1087	10024	67.9	73.2	3.5	7.5
518	KATY/CPRS//JKSN/3/AR 1188/CCDR	5	81	39	9091	855	9946	65.7	70.9	2.0	7.0
502	KATY/CPRS//JKSN/3/AR 1188/CCDR	5	81	39	8951	857	9808	67.0	73.5	2.5	8.0
508	TACAURI/CCDR	5	85	38	8505	1214	9719	64.7	72.7	2.0	5.5
504	8401-CP03/9502008	5	87	38	8074	1405	9479	68.8	72.1	6.5	6.0
505	8401-CP03/9502008	5	88	39	7755	1689	9444	68.8	72.1	6.0	5.5
510	CCDR/9502008-A	5	82	37	8240	536	8776	66.9	73.2	2.0	6.5
c.v.%		4.8	1.1	2.6	4.1	19.1	4.9	2.7	2.3		
$LSD_{0.05}$		0.5	1.8	2.0	739	599	1046	3.6	3.3		

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.
† Leaf blast rating 0-9, where 0 = no disease, 9 = maximum disease possible.
‡ SB = Sheath blight rating 0-9, where 0 = no disease, 9 = maximum disease possible.

Table 17. Agronomic and milling performance of 2005 preliminary yield test, Group 2, long-grain entries. Rice Research Station, Crowley, LA.

Entry	Pedigree	Vigor*	Days to 50% Heading	Plant Height (in)	Grain Yield (lb/A @ 12%)			Milling Yield (%)		Blast†	SB‡
					Main	Ratoon	Total	Whole	Total		
526	9502008-A/DREW	5	83	39	9375	1978	11353	66.4	72.2	2.5	7.5
538	KATY/CPRS//JKSN/3/AR 1188/CCDR	5	82	39	9069	2189	11258	65.0	70.7	2.5	7.0
542	9502008-A//AR 1188/CCDR	5	82	37	9667	1429	11096	64.6	71.7	2.5	7.5
541	9502008-A//AR 1188/CCDR	5	82	38	9116	1904	11020	60.6	67.4	2.0	7.5
544	9502008-A//AR 1188/CCDR	6	82	37	9528	1463	10991	63.2	69.9	2.0	7.0
539	KATY/CPRS//JKSN/3/AR 1188/CCDR	5	82	41	9015	1917	10932	61.8	68.6	3.0	7.0
549	9502008-A//AR 1188/CCDR	5	82	39	9466	1295	10761	65.0	72.0	3.0	7.5
547	9502008-A//AR 1188/CCDR	5	82	38	9406	1353	10759	66.7	73.3	2.0	7.5
536	9302065//LGRU/LCSN	6	89	35	8418	2323	10741	63.5	70.7	2.5	7.0
543	9502008-A//AR 1188/CCDR	5	83	37	9698	1036	10734	62.7	69.5	2.5	6.0
532	KBNT/JODN//CPRS/KBNT	5	85	36	8734	1840	10574	64.8	71.0	5.5	7.0
548	9502008-A//AR 1188/CCDR	5	83	39	9050	1468	10518	63.8	70.5	2.5	7.5
545	9502008-A//AR 1188/CCDR	5	82	39	9428	1018	10446	64.4	72.8	2.0	7.0
550	COCODRIE	6	82	39	8815	1556	10371	61.0	69.4	2.5	7.5
529	9502008//CPRS/KBNT	6	84	36	8600	1753	10354	68.9	73.6	6.0	6.5
537	9502008-A//AR 1188/CCDR	5	83	38	9544	739	10282	65.5	72.7	2.0	7.5
530	CCDR/4/CPRS/3/MBLE//LMNT/…	5	81	38	8751	1476	10226	63.0	68.4	3.5	6.5
531	CCDR/LGRU	5	82	39	8670	1555	10225	63.6	69.8	3.0	6.5
535	DREW/CCDR	5	83	38	7910	2194	10103	67.0	72.7	3.0	6.5
546	9502008-A//AR 1188/CCDR	5	84	38	9015	962	9978	64.6	71.7	2.0	7.0
527	CPRS/9502008-A	5	85	38	8533	1306	9838	66.4	72.0	4.5	7.0
540	902207X2/KBNT//CPRS	5	86	39	8376	1402	9778	67.9	72.0	4.5	6.5
534	9502008/3/CPRS//82CAY21/TBNT	5	82	36	8913	373	9287	67.2	73.4	2.5	7.5
528	9502008-A//CPRS/KBNT	5	88	40	8004	388	8391	68.7	72.7	6.5	4.5
533	9502008/3/CPRS//82CAY21/TBNT	5	82	35	7951	207	8158	66.3	72.1	3.0	7.5
c.v.%		5.7	0.9	2.3	3.3	15.3	3.7	4.1	3.4		
$LSD_{0.05}$		0.6	1.5	1.8	595	444	795	5.4	5.0		

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.
† Leaf blast rating 0-9, where 0 = no disease, 9 = maximum disease possible.
‡ SB = Sheath blight rating 0-9, where 0 = no disease, 9 = maximum disease possible.

Table 18. Agronomic and milling performance of 2005 preliminary yield test, Group 3, long-grain entries. Rice Research Station, Crowley, LA.

Entry	Pedigree	Vigor*	Days to 50% Heading	Plant Height (in)	Grain Yield (lb/A @ 12%)			Milling Yield (%)		Blast†	SB‡
					Main	Ratoon	Total	Whole	Total		
562	KATY/CPRS//JKSN/3/AR 1188/CCDR	5	82	39	9297	2447	11743	63.9	69.9	2.5	7.0
566	KATY/CPRS//JKSN/3/AR 1188/CCDR	5	81	41	9344	2026	11370	64.6	71.1	2.0	7.0
555	CCDR/3/KATY/CPRS//JKSN	5	83	38	9185	2136	11321	66.7	71.5	2.0	7.5
574	LGRU//AR 1188/CCDR	5	86	39	8778	2505	11282	65.4	69.8	4.0	6.5
558	CCDR/DREW	5	84	38	8406	2841	11247	64.8	70.8	4.0	6.0
573	LGRU//AR 1188/CCDR	5	87	36	8667	2543	11211	63.9	71.5	4.5	6.5
557	CCDR/3/KATY/CPRS//JKSN	5	82	39	9156	1959	11116	65.5	71.6	2.5	6.5
556	CCDR/3/KATY/CPRS//JKSN	5	83	39	8546	2564	11110	67.6	72.7	2.0	6.0
568	LCSN/CPRS//9502008-A	5	85	39	8610	2491	11101	67.6	71.8	2.0	7.0
569	LCSN/CPRS//9502008-A	5	87	37	7929	3105	11035	64.1	70.2	3.0	6.0
553	CCDR/3/KATY/CPRS//JKSN	5	82	39	8842	2117	10959	65.5	71.2	2.5	7.0
565	KATY/CPRS//JKSN/3/AR 1188/CCDR	5	84	38	8552	2406	10958	65.0	71.8	2.0	6.0
564	KATY/CPRS//JKSN/3/AR 1188/CCDR	5	84	39	8653	2301	10955	64.0	71.2	3.0	7.0
554	CCDR/3/KATY/CPRS//JKSN	5	84	39	8297	2265	10561	66.3	71.6	2.5	7.0
563	KATY/CPRS//JKSN/3/AR 1188/CCDR	5	82	39	8902	1600	10502	67.5	72.0	3.0	7.0
570	LCSN/CPRS//9502008-A	5	87	35	7394	3005	10399	63.8	70.3	5.0	6.0
552	CCDR/9502008-A	5	82	39	8796	1589	10385	65.1	70.5	3.0	7.5
551	9502008-A//AR 1188/CCDR	5	83	39	8845	1495	10340	67.4	73.1	2.5	7.0
572	LGRU//AR 1188/CCDR	5	88	37	8243	2082	10325	66.9	72.6	4.5	6.5
561	JEFF/AB SRM 154291	5	81	39	7927	1895	9822	64.5	70.2	3.0	6.0
567	KBNT/3/CPRS//82CAY21/4/AR SRM 154291	5	89	41	7771	1998	9770	57.3	67.4	3.5	4.5
575	CHENIERE	6	84	38	8676	1052	9728	65.1	72.5	6.0	6.5
559	JEFF/CCDR	5	82	35	7066	2579	9645	69.5	73.1	3.0	6.5
571	LGRU//AR 1188/CCDR	6	86	37	7425	1678	9104	63.5	72.9	4.5	6.0
560	JEFF/CCDR	6	83	38	7594	728	8321	64.0	71.7	3.5	6.0
c.v.%		2.8	1.0	2.1	4.1	16.2	5.9	4.8	2.5		
$LSD_{0.05}$		0.3	1.8	1.7	716	714	1286	6.5	3.6		

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.
† Leaf blast rating 0-9, where 0 = no disease, 9 = maximum disease possible.
‡ SB = Sheath blight rating 0-9, where 0 = no disease, 9 = maximum disease possible.

Table 19. Agronomic and milling performance of 2005 preliminary yield test, Group 4, long-grain entries. Rice Research Station, Crowley, LA.

Entry	Pedigree	Vigor*	Days to 50% Heading	Plant Height (in)	Grain Yield (lb/A @ 12%)			Milling Yield (%)		Blast†	SB‡
					Main	Ratoon	Total	Whole	Total		
578	LGRU/CCDR	5	86	37	8466	3212	11678	64.6	69.9	3.0	7.0
582	NWBT//KATY/EP227/3/9702128	5	86	35	8780	2895	11675	65.1	71.3	2.5	5.0
589	LGRU//CCDR 9770532 DH2	5	85	37	8658	2645	11303	65.7	73.1	3.5	6.0
586	MILL/4/AR 1179/3/CPRS/…	5	88	37	7672	3580	11252	62.4	71.4	4.5	5.0
588	LGRU//CCDR 9770532 DH2	5	85	36	8301	2912	11213	65.6	70.6	3.0	6.5
583	WELLS/CPRS	6	85	37	8318	2816	11133	63.9	72.7	5.0	7.0
580	LGRU/CCDR	5	85	35	8117	2878	10995	65.5	71.7	4.5	6.5
576	LGRU//AR 1188/CCDR	6	85	38	8028	2947	10975	65.8	72.3	5.0	7.0
587	MILL//9502008/LGRU	5	85	37	8092	2747	10839	59.4	71.0	4.5	4.5
584	WELLS/LSCN	6	86	34	7373	3363	10736	63.1	73.1	4.5	6.0
598	9302065//DREW/JEFF	5	86	35	8080	2579	10659	62.4	71.3	2.5	5.0
593	9302065/CPRS	5	87	38	7870	2730	10600	66.1	70.5	4.0	6.5
592	9302065/CPRS	5	87	38	8472	2122	10594	67.4	71.7	3.0	6.5
581	LGRU/CCDR	6	86	35	8322	2153	10475	66.8	73.4	2.0	6.5
600	CYPRESS	5	86	40	8355	1968	10323	67.6	72.5	5.0	6.0
594	9302065/CPRS	5	87	35	7602	2675	10277	65.7	72.0	6.0	7.0
577	LGRU/EP 144	5	84	39	8379	1881	10260	63.9	73.1	2.0	6.5
591	9302065/LGRU/JODN	5	88	36	7849	2350	10198	62.4	70.4	6.0	6.0
599	9302065//DREW/JEFF	5	86	35	8096	2080	10176	64.4	71.8	2.5	4.0
590	LGRU//CCDR 9770532 DH2	6	87	35	7100	2633	9733	67.0	72.0	3.5	6.5
595	9302065/CPRS	5	87	35	6992	2497	9490	67.2	71.4	6.0	7.0
579	LGRU/CCDR	6	87	35	6850	2475	9325	63.0	68.7	3.0	6.5
597	9302065/CPRS	6	87	37	7255	1866	9122	63.2	72.0	2.5	6.5
596	9302065/CPRS	5	89	38	7222	1603	8825	65.2	70.7	6.0	7.0
585	WELLS/DXBL	6	85	32	6924	1685	8610	56.0	70.7	4.5	6.5
c.v.%		7.4	0.9	2.6	3.2	12.3	4.0	2.7	1.2		
$LSD_{0.05}$		0.8	1.6	1.9	522	644	864	3.6	1.8		

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.
† Leaf blast rating 0-9, where 0 = no disease, 9 = maximum disease possible.
‡ SB = Sheath blight rating 0-9, where 0 = no disease, 9 = maximum disease possible.

Table 20. Agronomic and milling performance of 2005 preliminary yield test, Group 5, long-grain entries. Rice Research Station, Crowley, LA.

Entry	Pedigree	Vigor*	Days to 50% Heading	Plant Height (in)	Grain Yield (lb/A @ 12%)			Milling Yield (%)		Blast†	SB‡
					Main	Ratoon	Total	Whole	Total		
619	CPRS//NWBT/KATY/3/KBNT	5	84	36	8089	3312	11402	65.2	70.1	2.5	6.5
607	CCDR/LGRU	5	82	38	9157	2154	11310	67.8	72.1	2.5	6.5
614	9901081/CCDR	6	83	38	8397	2897	11294	65.5	71.4	2.0	5.5
610	DREW/CPRS	6	86	38	8247	3031	11278	62.7	71.7	2.5	5.5
605	SABER/LGRU	6	84	36	7513	3701	11214	67.7	71.8	2.0	6.0
613	9901081/CCDR	5	83	35	8605	2601	11206	66.7	72.5	3.0	6.0
606	CCDR/LGRU	5	82	38	9067	1984	11051	65.3	71.1	2.0	7.0
608	CCDR/LGRU	5	82	39	9091	1891	10981	66.2	71.6	4.5	7.0
602	SABER/LGRU	5	84	37	8420	2520	10940	62.4	70.0	2.0	6.0
616	9901081/CPRS	5	85	36	8083	2735	10817	67.2	72.5	4.0	5.5
604	SABER/LGRU	5	87	40	7820	2988	10808	62.9	70.6	2.5	5.0
624	CPRS/9901081	5	84	36	8360	2396	10757	57.1	70.5	5.0	7.5
621	CPRS/JEFF	5	86	39	8199	2558	10757	65.3	70.1	5.0	6.0
622	CPRS/9901081	5	83	41	7764	2862	10626	62.7	71.0	4.5	6.5
618	CPRS//NWBT/KATY/3/KBNT	5	85	34	7454	2898	10351	66.5	71.4	2.0	6.0
612	9901081/CCDR	6	83	34	8180	1920	10100	63.9	71.2	3.0	7.0
609	LCSN/LGRU	6	87	35	7188	2857	10045	66.7	73.2	5.0	5.0
603	SABER/LGRU	5	86	38	6992	3008	10000	66.7	73.1	2.5	5.5
625	CL131	5	82	35	8381	1522	9903	60.5	70.7	4.5	7.5
615	9901081/CCDR	5	82	36	8426	1432	9858	65.0	71.0	2.5	7.5
611	DREW/CPRS	5	86	35	6686	3136	9822	67.6	72.2	2.5	5.0
601	JEFF/3/CPRS/NWBT//KATY	6	86	36	8304	1412	9716	67.4	72.8	7.0	5.0
620	CPRS/JKSN	5	83	35	7130	2491	9620	66.8	71.4	4.5	6.5
617	CPRS//NWBT/KATY/3/KBNT	6	86	35	7611	1473	9084	61.6	72.3	2.5	6.5
623	CPRS/9901081	6	86	36	6520	2392	8912	58.8	69.8	4.5	6.5
c.v.%		7.2	0.9	2.8	3.5	16.6	4.5	3.3	1.7		
$LSD_{0.05}$		0.8	1.6	2.1	584	849	975	4.4	2.4		

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.
† Leaf blast rating 0-9, where 0 = no disease, 9 = maximum disease possible.
‡ SB = Sheath blight rating 0-9, where 0 = no disease, 9 = maximum disease possible.

Table 21. Agronomic and milling performance of 2005 preliminary yield test, Group 6, long-grain entries. Rice Research Station, Crowley, LA.

Entry	Pedigree	Vigor*	Days to 50% Heading	Plant Height (in)	Grain Yield (lb/A @ 12%)			Milling Yield (%)		Blast†	SB‡
					Main	Ratoon	Total	Whole	Total		
636	LGRU//CCDR 9770532 DH2	5	87	38	8752	3978	12730	66.2	73.2	1.5	5.5
635	LGRU//CCDR 9770532 DH2	5	87	38	8662	3727	12389	65.4	72.4	2.0	6.0
647	MCR 4933//CPRS/97T1280 DH1	5	83	37	8720	3303	12023	60.3	69.3	2.5	6.0
629	CPRS/NWBT//KATY/3/CCDR	5	82	36	9078	2371	11449	66.1	72.2	5.0	7.0
649	NWBT/KATY/3/82CAY21/…/4/MCR 4933	5	84	38	8311	3047	11358	65.3	69.8	1.0	4.5
639	CCDR/LGRU	5	81	40	9049	2201	11250	64.1	69.6	2.5	6.5
638	CCDR/LGRU	6	81	39	9026	2199	11225	63.5	68.9	2.0	7.0
628	CPRS/NWBT//KATY/3/CCDR	5	83	36	8658	2272	10930	67.2	71.7	3.5	6.0
644	9302065/DREW//WELLS	5	84	35	7564	3359	10922	63.0	72.4	2.5	5.5
630	NWBT/KATY/3/82CAY21/../4/DREW	5	85	35	9117	1689	10806	67.3	73.1	5.0	5.0
650	URN 002	5	81	40	9117	1686	10803	63.6	69.6	2.0	7.5
645	KATY/CPRS/3/VSTA/…	6	84	37	7834	2791	10625	65.9	70.5	2.5	6.5
648	NWBT/KATY/3/82CAY21/…/4/MCR 4933	5	83	37	7798	2742	10540	61.6	69.2	2.0	5.5
643	KATY/CPRS/3/VSTA/…	5	83	37	8386	2088	10474	66.5	71.3	6.0	7.0
634	MILL/CCDR	5	81	34	7508	2833	10341	66.5	72.4	4.5	6.5
637	CCDR/JEFF	5	84	36	7758	2495	10253	58.6	65.2	2.5	6.5
640	CCDR/9901081	5	86	37	8418	1828	10247	68.2	72.5	2.0	5.5
627	CPRS/NWBT//KATY/3/CCDR	5	82	37	7805	2347	10152	63.5	69.8	5.5	7.5
641	9901081/CCDR	5	78	40	8941	1030	9972	63.3	70.8	2.0	6.5
633	JKSN/CPRS	6	83	36	8300	1456	9756	66.0	71.2	5.5	7.0
632	AR 1179/3/CPRS//…/4/WELLS	5	87	33	7782	1906	9688	63.5	70.8	6.0	6.0
631	AR 1179/3/CPRS//…/4/WELLS	5	89	37	6769	2675	9444	64.2	70.3	6.0	5.0
642	9302065/DREW//WELLS	6	87	34	6468	2890	9357	54.0	72.2	7.0	4.5
626	CPRS/9901081	6	84	36	7774	1414	9189	66.2	72.5	5.0	6.5
646	MCR 4933//CPRS/97T1280 DH1	5	83	35	6812	1031	7844	58.7	69.9	1.5	6.5
c.v.%		6.3	1.1	2.6	3.8	19.2	5.1	2.5	1.4		
$LSD_{0.05}$		0.7	1.9	1.9	635	941	1107	3.3	2.0		

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

† Leaf blast rating 0-9, where 0 = no disease, 9 = maximum disease possible.

‡ SB = Sheath blight rating 0-9, where 0 = no disease, 9 = maximum disease possible.

Table 22. Agronomic and milling performance of 2005 preliminary yield test, Group 7, long-grain entries. Rice Research Station, Crowley, LA.

Entry	Pedigree	Vigor*	Days to 50% Heading	Plant Height (in)	Grain Yield (lb/A @ 12%)			Milling Yield (%)		Blast†	SB‡
					Main	Ratoon	Total	Whole	Total		
669	9302065/CCDR	5	83	39	8043	3713	11756	65.6	70.0	6.0	7.0
670	SABER/CCDR	5	81	38	8101	3578	11679	66.6	71.4	2.0	6.0
673	CCDR/3/CPRS/NWBT//KATY	5	82	37	9043	2608	11651	66.6	72.7	4.5	6.0
651	NWBT/KATY/3/82CAY21/…/4/MCR 4933	5	86	37	8649	2892	11541	66.1	72.2	3.5	5.0
674	CCDE/3/CPRS/NWBT//KATY	6	79	37	8886	2602	11488	67.6	72.0	2.5	6.0
659	9502008/CPRS//9502008/LGRU	5	84	36	7985	3355	11340	65.4	71.8	2.0	6.5
657	9502008/CPRS//WELLS	5	85	36	8438	2789	11227	67.1	73.2	5.0	5.0
665	MILL/CCDR	6	80	37	7989	3124	11113	67.3	73.9	2.5	6.0
672	CCDR/3/CPRS/NWBT//KATY	6	84	38	8385	2657	11042	66.9	71.2	2.0	6.0
667	LGRU//CCDR 9770532 DH2	5	82	38	8633	2393	11026	67.2	71.0	3.0	6.0
675	URN 045	5	82	38	8191	2816	11008	62.8	72.1		6.5
664	MILL//CPRS/97T1280 DH1	5	83	39	7458	3506	10963	65.1	71.9	3.5	6.0
655	9502008/CPRS//WELLS	5	85	38	7573	3250	10823	68.4	72.7	3.0	4.5
671	CCDR/3/CPRS/NWBT//KATY	5	82	37	8943	1820	10763	68.9	73.1	4.0	7.0
662	9502008/CPRS/4/KATY/CPRS/3/VSTA/…	5	87	37	7445	3059	10504	68.4	72.5	3.0	6.0
660	9502008/CPRS//9502008/LGRU	5	85	35	8027	2467	10493	65.3	70.6	2.0	6.5
663	MBLE/CCDR	5	76	35	8642	1771	10414	67.0	72.4	2.5	7.5
652	WELLS/AHRENT	5	85	34	7979	2409	10389	61.8	69.9	3.0	4.5
668	LGRU//CCDR 9770532 DH2	5	79	39	8792	1484	10276	66.6	72.0	4.0	6.0
654	WELLS/AHRENT	5	81	36	8162	2071	10233	59.1	69.9	4.0	7.0
666	MILL//9502008/LGRU	5	83	35	7175	3014	10189	67.8	72.3	4.5	7.0
656	9502008/CPRS//WELLS	5	88	36	6357	3681	10039	64.7	69.9	3.0	5.0
661	9502008/CPRS/4/KATY/CPRS/3/VSTA/…	5	84	40	8122	688	8810	61.7	71.4	6.0	5.0
658	9502008/CPRS//WELLS	5	83	36	7318	991	8309	63.3	72.6	6.0	6.0
653	WELLS/AHRENT	6	83	34	5624	1310	6933	62.2	70.2	3.5	5.0
c.v.%		5.7	1.3	3.1	4.7	16.1	4.3	1.7	1.0		
$LSD_{0.05}$		0.6	2.2	2.3	771	851	929	2.3	1.5		

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.
† Leaf blast rating 0-9, where 0 = no disease, 9 = maximum disease possible.
‡ SB = Sheath blight rating 0-9, where 0 = no disease, 9 = maximum disease possible.

Table 23. Agronomic and milling performance of 2005 preliminary yield test, Group 8, long-grain entries. Rice Research Station, Crowley, LA.

Entry	Pedigree	Vigor*	Days to 50% Heading	Plant Height (in)	Grain Yield (lb/A @ 12%)			Milling Yield (%)		Blast†	SB‡
					Main	Ratoon	Total	Whole	Total		
699	LMNT/20001-5/3/LMNT/L-202/4/JKSN/CPRS	5	81	41	8606	4174	12780	64.6	71.7	5.0	5.5
690	CCDR/LGRU	5	82	36	8817	3153	11970	66.7	73.8	2.5	7.5
683	CPRS//NWBT/KATY/3/CCDR	5	85	35	8130	3744	11874	66.4	71.3	2.5	5.5
681	DREW/CPRS	5	84	39	8726	3147	11873	67.5	71.9	2.5	5.5
691	DREW/CCDR	5	80	40	8955	2745	11700	67.3	72.1	3.0	5.5
678	CCDR/LGRU	5	81	39	8907	2712	11619	66.5	71.5	2.0	6.5
682	9901081/CCDR	5	80	37	9160	2419	11579	65.8	72.0	3.5	6.0
700	URN 065	5	82	40	9048	2412	11460	67.8	73.3		6.5
677	CCDR/4/NWBT/KATY/3/82CAY21/…	5	82	35	9143	2249	11392	63.0	71.1	4.5	6.5
692	CPRS/3/KBNT//CPRS/MBLE	5	83	37	7691	3659	11350	67.1	71.8	5.5	6.5
676	CCDE/3/CPRS/NWBT//KATY	5	83	36	8249	2846	11094	66.8	72.1	3.5	5.5
694	AR 1142/LA 2031//CPRS	5	86	34	8382	2692	11075	62.6	68.2	6.0	6.5
693	CPRS/3/KBNT//CPRS/MBLE	5	84	37	8312	2601	10913	65.2	70.4	4.0	7.0
688	JEFF/JODN	5	82	37	8517	2387	10904	65.9	71.0	7.5	6.5
684	JODN/3/KATY/CPRS//RT 7015	5	84	38	8144	2716	10860	65.9	72.0	6.0	6.0
679	CCDR//AR 1188/CCDR	5	81	38	8522	2301	10823	64.1	69.8	2.0	7.0
698	LMNT/20001-5/3/LMNT/L-202/4/JKSN/CPRS	5	76	39	8250	2364	10613	67.3	72.5	5.0	5.5
695	902207X2//NWBT/KATY/3/CH1	5	82	39	7859	2631	10490	66.1	70.7	5.0	6.5
687	9302065//LGRU/LCSN	5	85	40	7034	3311	10345	67.9	72.8	2.0	4.5
696	902207X2//NWBT/KATY/3/CPRS/LGRU	6	83	37	8343	1989	10331	67.9	74.7	3.5	7.0
697	LMNT/20001-5/3/LMNT/L-202/4/JKSN/CPRS	5	80	36	8612	1701	10313	62.3	69.4	5.0	6.5
685	JODN/3/KATY/CPRS//RT 7015	5	82	37	8160	2112	10272	64.7	70.7	6.5	6.5
680	LMNT/WELLS	5	86	38	6887	3264	10150	62.4	73.2	5.0	5.0
689	CCDR/LGRU	5	85	38	6585	3124	9708	67.2	71.7	6.5	5.5
686	JODN/3/KATY/CPRS//RT 7015	5	83	41	7501	1729	9231	66.8	71.2	6.0	5.5
c.v.%		2.8	0.9	3.1	4.7	24.6	6.9	2.2	1.7		
$LSD_{0.05}$		0.3	1.6	2.4	809	1355	1549	3.0	2.5		

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.
† Leaf blast rating 0-9, where 0 = no disease, 9 = maximum disease possible.
‡ SB = Sheath blight rating 0-9, where 0 = no disease, 9 = maximum disease possible.

Table 24. Agronomic and milling performance of 2005 preliminary yield test, Group 9, long-grain entries. Rice Research Station, Crowley, LA.

Entry	Pedigree	Vigor*	Days to 50% Heading	Plant Height (in)	Grain Yield (lb/A @ 12%)			Milling Yield (%)		Blast†	SB‡
					Main	Ratoon	Total	Whole	Total		
725	XP 723	6	80	46	10280	4338	14618	58.4	68.4	1.5	5.5
714	LCSN/CPRS//9502008-A	5	86	39	8601	4189	12790	65.4	70.3	2	6.5
711	LGRU//AR 1188/CCDR	5	86	37	8727	3651	12378	63.2	68.9	3.5	6.5
716	LCSN/CPRS//9502008-A	5	85	35	9057	3236	12294	66.8	72.1	4	5.5
713	9602065/9702128	5	85	38	7935	4226	12160	67.3	71.5	2	6.5
715	LCSN/CPRS//9502008-A	5	82	37	8698	3447	12145	65.3	70.3	4.5	7
722	9502008-A//AR 1142/MBLE	5	82	35	9134	2817	11951	63.3	70.7	2	8
724	9502008-A//AR 1188/CCDR	5	79	39	9283	2653	11937	64.2	70.4	3	7
717	LCSN/CPRS//9502008-A	5	83	37	9047	2823	11870	65.9	72.8	4.5	6.5
712	9602065/9702128	5	83	38	8675	3113	11789	63.9	71.4	2.5	5.5
703	CPRS/KBNT//MBLE	5	80	33	8677	3080	11757	65.9	71.9	2.5	7.5
708	CPRS/KBNT//9502008-A	5	81	36	9636	1791	11427	64.9	72.6	5.5	8
720	CPRS/LGRU	5	82	39	9067	2340	11408	62.6	68.6	2	6
719	CPRS/LGRU	5	82	39	8954	2430	11383	64.9	71.2	2	8
723	9502008-A//AR 1188/CCDR	5	81	39	9226	2139	11364	65.7	71.2	2	7
718	CPRS/LGRU	5	81	38	9419	1889	11308	66.9	72.1	2.5	7
702	LBLEX2/BJ-1*F//…/3/GCHW/4/CPRS/LGRU	5	81	35	8318	2743	11061	66.2	70.2	6	8
705	KBNT/JODN//CPRS/KBNT	5	82	40	8635	2325	10959	65.4	69.8	4.5	5
710	CPRS/LGRU//9902002	5	82	37	7599	3274	10873	67.8	72.3	2.5	7
721	CPRS/LGRU	5	81	37	9096	1546	10642	65.6	71.8	2	7
701	9702128/9902045	5	82	36	8812	1804	10617	60.0	68.8	4.5	5.5
707	AR 1142/JODN//9502008-A	6	81	38	9029	1148	10178	62.0	70.2	6	7
706	AR 1142/JODN//9502008-A	5	87	41	7664	2443	10107	65.5	71.2	3	4.5
704	KBNT/JODN//CPRS/KBNT	5	82	40	8156	1886	10041	67.6	71.3	5	5
709	JKSN//902207X2/3/9502008-A	5	81	36	8388	1044	9433	68.1	72.2	3	7
c.v.%		3.9	1.1	3.2	5.0	23.5	7.1	3.5	2.3		
$LSD_{0.05}$		0.4	1.8	2.5	905	1264	1668	4.8	3.4		

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.
† Leaf blast rating 0-9, where 0 = no disease, 9 = maximum disease possible.
‡ SB = Sheath blight rating 0-9, where 0 = no disease, 9 = maximum disease possible.

Table 25. Agronomic and milling performance of 2005 preliminary yield test, Group 10, long-grain entries. Rice Research Station, Crowley, LA.

Entry	Pedigree	Vigor*	Days to 50% Heading	Plant Height (in)	Lodging (%)	Grain Yield (lb/A @ 12%) Main	Ratoon	Total	Milling Yield (%) Whole	Total	Blast†	SB‡
750	XP 730	5	83	49	30	9426	4050	13476	58.0	69.1	2	5.5
728	CCDR/9502008-A	5	81	39		9531	2861	12391	66.7	71.4	2	6.5
747	DREW/3/KBNT//KATY/CPRS/4/WELLS	5	84	43		9250	3110	12359	60.0	70.2	3.5	5
730	CPRS/LGRU//LGRU	5	84	41		9000	3156	12155	65.4	72.6	5	6
727	AR 1188/CCDR//AR 1142/MBLE	5	81	34		9192	2952	12144	65.3	70.1	5	7
732	KATY/CPRS//JKSN/3/AR 1188/CCDR	5	81	39		9211	2787	11997	64.9	69.6	2	6.5
741	9602065/9702128	5	82	38		8307	3649	11956	63.1	68.9	4	7
739	9602065/3/KATY/CPRS//JKSN	5	83	37		8499	3314	11813	66.0	72.9	3	6
744	CCDR/MILL	5	82	38		7939	3718	11658	69.0	72.6	3.5	7
735	9502008-A//AR 1142/MBLE	5	80	33		8692	2910	11602	66.5	72.9	6	6
746	CCDR//9502008-A/DREW	5	83	39		8676	2793	11469	69.6	73.8	1.5	6
740	9602065/3/KATY/CPRS//JKSN	5	82	39		7818	3552	11369	67.2	72.2	2	6.5
733	NWBT//KATY/EP227/3/9702128	5	81	37		8924	2420	11344	65.1	71.3	4	7
743	CCDR/MILL	5	78	36		8394	2800	11194	67.7	71.7	4.5	7.5
726	9502008-A//AR 1188/CCDR	5	81	37		8572	2375	10948	63.2	68.6	3	6.5
738	9502008-A//CCDR/LGRU	5	82	40		8721	2101	10822	66.8	72.5	6	7
737	9502008-A//CCDR/LGRU	5	82	39		8012	2544	10557	68.3	72.4	5.5	6.5
734	WELLS/LSCN	5	85	36		7997	2301	10298	61.8	73.2	6	6
729	CCDR/CPRS	5	82	38		8035	1939	9974	63.8	69.4	3	7.5
736	9502008-A//CCDR/LGRU	5	85	39		7489	2326	9816	64.2	68.3	5.5	7
745	9302065//CPRS/97T1280DH1	5	87	38		7746	2059	9805	63.0	70.3	2.5	5.5
742	AR 1142/JODN/3/KATY/CPRS//JKSN	5	84	38		8270	1516	9787	66.6	73.5	2	6
749	KATY/CPRS//NWBT/KATY	5	85	37		8751	947	9698	65.8	70.6	2	6
731	JKSN/CCDR	5	81	36		7958	1675	9633	64.0	68.7	5.5	6
748	KATY/CPRS//NWBT/KATY	6	85	36		8591	990	9581	61.1	70.6	2	6.5
c.v.%		2.8	0.9	1.9		4.2	21.1	4.7	2.9	1.9		
$LSD_{0.05}$		0.3	1.6	1.5		745	1130	1083	3.8	2.8		

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.
† Leaf blast rating 0-9, where 0 = no disease, 9 = maximum disease possible.
‡ SB = Sheath blight rating 0-9, where 0 = no disease, 9 = maximum disease possible.

Table 26. Agronomic and milling performance of 2005 single plot test (SP), long-grain entries, Rice Research Station, Crowley, LA.

SP Entry	Pedigree	Vigor*	Days to 50% Heading	Height (inch)	Lodg-ing (%)	Yield (lb/A @ 12%) Main	Ratoon	Total	Milling (%) Whole	Total
001	9502008/CPRS	5	84	40		9675	3569	13244	69.5	73.5
120	CCDR/MILL	5	80	36		9048	4085	13133	68.7	73.4
024	AR 1188/CCDR/4/KBNT/3/CPRS//L202	5	81	40		9370	3472	12842	68.7	73.5
125	URN 022	5	83	39		9900	2941	12841	64.3	69.3
027	9502008-A//AR 1188/CCDR	5	81	39		10061	2716	12777	66.7	72.7
103	LCSN/LGRU	5	86	37		8677	4084	12761	65.6	72.3
072	CPRS//NWBT/KATY/3/KBNT	5	83	37		9462	3263	12725	68.1	72.6
038	JEFF/AB SRM 154291	5	82	39		9202	3443	12645	66.8	70.3
047	LGRU//AR 1188/CCDR	5	84	38		9537	3084	12620	62.6	72.2
032	CCDR/3/KATY/CPRS//JKSN	5	81	37		9487	3068	12555	68.5	74.2
101	JEFF/3/CPRS/NWBT//KATY	5	83	39		9478	3074	12553	67	71.8
022	AR 1188/CCDR//AR 1142/LA 2031	5	81	39		9694	2858	12552	66.4	71.1
008	9502008/3/CPRS//82CAY21/TBNT	5	81	39		9529	2970	12498	66.4	71.7
112	CPRS/LGRU	5	83	38		8571	3892	12463	69.5	73.1
050	COCODRIE	5	83	39		10005	2427	12432	65.9	73
019	9302065//LGRU/LCSN	5	86	33		9079	3172	12251	67.7	71.7
043	LCSN/CPRS//9502008-A	5	80	36		9581	2593	12174	63.4	69.7
086	CCDR/9770532 DH1//CPRS	5	82	38		9003	3111	12115	65.9	70.7
114	TACAURI/CPRS	5	83	39		10035	2078	12114	67.1	72.5
119	CPRS/LGRU	5	81	39		9669	2435	12104	64.5	70.8
048	LGRU/EP 144	5	86	36		8680	3406	12086	68.5	73.9
105	9901081/CPRS	5	83	43		9286	2769	12055	65.9	72.2
053	WELLS/CPRS	5	85	40		8564	3482	12046	65.6	74
118	LCSN/CPRS//9502008-A	5	81	39		9071	2964	12035	67.3	72.4
113	LBLEX2/BJ-1*F//…/3/GCHW/4/L-205	5	81	41		9493	2538	12031	66.5	70.7
095	9502008/CPRS//WELLS	5	82	34		9413	2610	12023	65.8	71.4
111	CPRS/9502008-A	5	84	38		9171	2837	12008	66.6	71.9
031	9502008-A//AR 1188/CCDR	5	82	39		9556	2446	12002	66.8	73.4
063	CCDR/3/CPRS/NWBT//KATY	5	83	41		9508	2478	11986	64.5	70
093	9302065/DREW//WELLS	5	84	35		9427	2511	11938	58	72.9
052	LGRU/CCDR	5	87	40		8181	3733	11914	68.1	72.1
123	CPRS/CH1	5	81	39		9494	2401	11894	62.9	69.2
039	KATY/CPRS//JKSN/3/AR 1188/CCDR	5	82	39		10259	1612	11870	65.1	70.6
094	9502008/CPRS//WELLS	5	84	36		9312	2530	11841	62.5	69.4
079	CPRS/9901081	5	85	35		8293	3535	11829	62.9	71.9
034	CCDR/3/KATY/CPRS//JKSN	5	82	38		9116	2682	11798	64.2	68.9
099	MILL/CCDR	5	80	37		8343	3440	11782	69.3	72.7
078	CPRS/9901081	5	83	33		8666	3073	11739	64.9	70.2
065	CCDR/MILL	5	77	37		8835	2896	11731	69.1	73.6
084	CPRS/NWBT//KATY/3/CCDR	5	77	34		8862	2857	11719	66.5	72.3
082	AR 1188/CCDR//LCSN	5	82	31		8350	3289	11640	68.2	72.5
064	CCDR/LGRU	5	82	39		8998	2630	11628	65.1	69.3
081	AR 1188/CCDR//LCSN	5	85	34		8391	3213	11603	68.3	72.1
011	CPRS//82CAY21/TBNT/3/LBLE	5	83	39		8869	2698	11566	63.2	69.1
044	LCSN/CPRS//9502008-A	5	84	35		8644	2847	11490	67.1	72.2
020	9302065//LGRU/LCSN	5	85	32		8822	2667	11489	67.4	72.4

Continued.

Table 26. Continued.

SP Entry	Pedigree	Vigor*	Days to 50% Heading	Height (inch)	Lodg-ing (%)	Yield (lb/A @ 12%) Main	Ratoon	Total	Milling (%) Whole	Total
029	9502008-A//AR 1188/CCDR	5	82	37		9899	1568	11467	67.5	73.9
102	CCDE/3/CPRS/NWBT//KATY	5	80	39		9069	2395	11464	67.6	72
106	JEFF/JODN	5	82	38		9496	1966	11462	61.5	69.6
115	TACAURI/KBNT/LCSN	5	86	35		8080	3378	11458	67.1	72.7
110	CCDR/LGRU	5	81	38		9824	1603	11427	67.7	72.4
025	TRENASSE	5	77	38		9426	1999	11425	61.6	67.3
030	9502008-A//AR 1188/CCDR	5	82	37		9481	1937	11417	64.9	70
057	MILL/CCDR	5	82	35		8100	3308	11409	68.7	72.1
109	CCDR/LGRU	5	83	39		9463	1934	11397	65.5	69.9
074	CPRS/3/CPRS/NWBT/KATY	5	85	36		8833	2508	11340	67.1	73.1
035	CCDR/DREW	5	81	38		9924	1396	11320	66.6	71.8
045	LGRU//AR 1188/CCDR	5	84	36		9020	2295	11315	65.2	71.6
012	CPRS/LGRU	5	83	37		9060	2248	11308	69	72
107	9502008-A/JEFF	5	80	38		8972	2317	11289	64.4	69.6
054	WELLS/DXBL	5	84	44		8959	2253	11212	61.5	72.1
058	MILL//9502008/LGRU	5	81	38		8296	2916	11212	65.1	70.3
049	LGRU/CCDR	5	86	38		8387	2808	11194	63.3	71.3
067	LCSN/LGRU	5	87	37		7784	3364	11147	59.4	70.7
040	KATY/CPRS//JKSN/3/AR 1188/CCDR	5	82	39		8896	2197	11093	64.5	70.1
087	CCDR/9770532 DH1//MBLE	5	85	33		8096	2994	11091	66.1	74.3
041	LCSN/CPRS//9502008-A	5	85	37		8686	2392	11078	67.2	73
046	LGRU//AR 1188/CCDR	5	81	37		9059	2009	11068	68.2	74.7
006	L201//TBNT/…/NWBT/KATY//902207X2	5	84	35		8376	2686	11062	62.2	68
051	LGRU/CCDR	5	84	36		9041	1981	11022	66.9	72.5
077	CPRS/9901081	5	83	36		8843	2173	11015	64.1	72.4
073	CPRS/3/CPRS/NWBT/KATY	5	83	35		9235	1769	11003	62.1	70.4
116	TACAURI/CCDR	5	85	34		8862	2105	10967	66.3	71.9
100	URN 008	5	85	39		8970	1993	10963	65	70.7
056	MILL/4/AR 1179/3/CPRS/…	5	85	39		7911	3030	10941	67.3	72.1
108	9502008-A/JEFF	5	81	38		8062	2861	10922	67.9	70.9
004	KATY/CPRS//NWBT/…/3/LMNT	5	86	39		8301	2558	10859	66.8	73.2
033	CCDR/3/KATY/CPRS//JKSN	5	81	37		9390	1436	10826	65.1	70.7
122	9602065/3/KATY/CPRS//JKSN	5	83	35		7826	2979	10805	64.6	74.9
117	KBNT/JODN//CPRS/KBNT	5	82	41		8899	1895	10794	61.7	66.6
037	JEFF/AB SRM 154291	5	84	35		8194	2573	10767	68.2	71.9
005	KATYCPRS//NWBT/…/3/9502008	6	83	37		8405	2325	10731	65.5	72
075	URN 005	5	85	37		8894	1828	10723	60.6	71.4
062	CCDR/3/CPRS/NWBT//KATY	5	85	37		8489	2230	10719	66.8	71.8
028	9502008-A//AR 1188/CCDR	5	80	40		9520	1189	10709	65.1	70.7
070	9901081/CPRS	5	83	37		9250	1370	10620	65	69.6
083	AR 1188/CCDR//LCSN	5	85	31		7065	3528	10593	62.3	72.4
026	902207X2/KBNT//CPRS	5	85	37		8406	2168	10575	65.8	70.4
010	CPRS//82CAY21/TBNT/3/LBLE	5	81	40		8942	1561	10502	62.2	69.8
124	FRAN/CCDR	5	82	38		8192	2298	10490	65.8	70.3
014	9302065/9502008-A	5	82	38		8095	2392	10487	67.1	71.3
097	9502008/CPRS/4/KATY/CPRS/3/…	5	86	38		8468	1986	10454	60.3	70.6
055	JKSN/MCR 4933	5	84	36		6980	3398	10378	65.8	71.8

Continued.

Table 26. Continued.

SP Entry	Pedigree	Vigor*	Days to 50% Heading	Height (inch)	Lodg-ing (%)	Yield (lb/A @ 12%) Main	Ratoon	Total	Milling (%) Whole	Total
096	9502008/CPRS//WELLS	5	86	35		8543	1833	10376	63	72.4
009	CPRS//82CAY21/TBNT/3/LBLE	5	80	39		9005	1287	10292	63.5	69.5
061	9302065/CPRS	5	83	38		7651	2637	10288	63.6	70.3
098	JKSN/MCR 4933	5	83	35		7187	3094	10282	66.2	73.5
090	CPRS/97T1280/3/CPRS/NWBT//KATY	5	86	39		7564	2711	10274	58.8	69.6
076	CPRS/9901081	5	84	33		8415	1630	10045	68.9	72.8
059	9302065/LGRU/JODN	5	86	36		7749	2247	9996	61.7	71.7
121	9502008-A//CCDR/LGRU	5	84	37		8364	1613	9976	67.2	72
018	9502008-A//CPRS/KBNT	5	84	39		8907	1069	9976	63.9	71.6
036	CCDR/DREW	5	85	36		7046	2899	9944	67.2	73
015	9302065//LGRU/LCSN	5	86	38		7401	2534	9935	63.5	70.6
089	CPRS/97T1280 DH1/3/CPRS/NWBT//…	5	88	35		7588	2261	9849	54.8	67.8
066	LCSN/LGRU	5	87	36		8263	1552	9815	60.8	71.9
021	CPRS/LGRU//LGRU	5	85	36		7993	1787	9780	62.2	71
104	9901081/CCDR	5	81	37		8780	967	9746	63.5	68.3
092	9302065//DREW/JEFF	5	87	36		7546	2103	9649	66.1	71.4
085	AR 1179/3/CPRS//…/4/WELLS	5	89	38		7900	1736	9636	59.3	67.5
088	CPRS/97T1280 DH1/3/CPRS/NWBT//…	5	89	37		8270	1357	9628	58.2	67.8
069	9901081/CCDR	5	79	39		8012	1580	9592	65.9	71.2
091	MILL/CCDR	5	82	35		8010	1543	9553	70.7	73.7
071	9901081/CPRS	5	85	39		6324	3174	9498	58.4	71.1
023	AR 1188/CCDR//AR 1142/LA 2031	5	81	35		8783	712	9495	66.8	71.4
060	9302065/CPRS	5	86	38		7866	1582	9448	67.5	72.4
003	KATY/CPRS//NWBT/…/3/LMNT	5	85	37		7860	1529	9389	66.8	70.8
042	LCSN/CPRS//9502008-A	5	85	35		7625	1685	9309	66.5	72
016	CPRS/3/KBNT//CPRS/MBLE	5	83	38		8764	540	9304	65.8	73.4
007	KATY/CPRS//…	5	86	33		7907	1323	9230	63.6	69.7
013	LMNT/CCDR	5	85	35		6601	2471	9073	67.8	72.4
002	LGRU/9302065	5	86	38		7475	1436	8911	66.9	72.8
080	CPRS/9901081	5	87	35		7563	1152	8716	65.3	70.5
068	DREW/CPRS	5	87	35		7354	623	7977	68.6	72.5
017	MBLE//CPRS/KBNT	5	84	35		7167	737	7904	66.3	72.4

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

CLEARFIELD EXPERIMENTAL LINES

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The combination of a Clearfield variety with use of the NewPath (*imazethypr*) herbicide can be used in a program to selectively eliminate red rice in a commercial rice field. Since the majority of the current Clearfield rice acreage was planted with CL161 (a Cypress mutant), there is a great potential to improve Clearfield rice production by the development of new Clearfield varieties.

The Rice Breeding Project at the LSU AgCenter's Rice Research Station (RRS) has been actively involved in the development of new Clearfield lines that combine the high level of herbicide resistance, high yield potential, and good agronomic characteristics. Due to the limitation of both mutation and backcross breeding, conventional pedigree breeding has continued to be the primary method for the development of new Clearfield rice varieties. Crosses are continuously made to combine the high level of *imazethypr* resistance of CL161 and its derived experimental lines with high yield potential of conventional long-grain varieties or lines. On- and off-station (in-farm) trials were conducted to evaluate these lines in a typical breeding trial for yield, milling, and agronomic performance. These trials were also treated with the herbicide Newpath to evaluate resistance levels. In each of the trials, *imazethypr* was applied at a rate of 0.126 lb ai/A at emergence after drill seeding, and again at the 3- to 4-leaf stage.

In 2005, advanced yield trials, including 18 experimental Clearfield lines, along with check varieties CL131 (a new Clearfield variety released in 2004) and CL161, were tested at RRS and six off-station locations. Another 140 experimental lines (106 in replicated trial and 34 in single plot trial) and the check varieties CL131 and CL161 were tested in our preliminary yield trials at the RRS. All on- and off-station tests were planted as companion tests to the commercial advanced (CA) tests, except for the Acadia Parish site that was planted at April 5 and harvested at August 12. Standard agronomic practices were used for all trials. The experimental design was a randomized complete block with two to three replications for each location. Plot size was 4.67 x 16 ft. Yield and agronomic performance of advanced tests are listed in tables 1-7, while preliminary test results are listed in tables 8-13.

Table 1. Agronomic and milling performance of 2005 Clearfield advanced yield trials, Acadia Parish, LA.

Entry	Source	Vigor*	Days to 50% Heading	Plant Height (inch)	Yield (lb/A @ 12%)	Milling (%)	
						Whole	Total
001	CFX-29//AR 1142/LA 2031	4	76	39	9461	63.6	70.1
011	WELLS/CFX-18	5	77	33	9298	61.9	72.6
003	CFX-18//CCDR/9770532 DH2	4	77	37	9166	63.8	71.2
018	AR 1179/3/CPRS//…/4/CFX-18	4	78	38	9045	60.4	71.6
006	CFX-26/9702128	4	76	36	8908	60.1	71.0
005	DREW/JEFF//CFX-18	4	78	38	8877	65.5	71.9
012	CFX-18//CCDR/9770532 DH2	4	76	34	8851	62.6	68.8
002	CFX-18//CCDR/9770532 DH2	5	77	37	8789	64.6	72.7
009	AR 1179/3/CPRS//…/4/CFX-18	5	79	37	8757	61.7	71.7
004	WELLS/CFX-18	5	75	35	8722	58.7	72.8
019	CL131	5	75	32	8712	58.0	62.8
015	CFX-18//CCDR/9770532 DH2	5	78	38	8683	64.9	72.2
016	DREW/JEFF//CFX-18	5	76	35	8669	62.0	69.5
008	WELLS/CFX-18	5	76	37	8666	63.4	70.7
020	CL161	5	78	37	8661	63.8	70.9
010	DREW/JEFF//CFX-18	5	77	36	8614	64.9	70.5
007	CFX-29//AR 1142/LA 2031	4	75	33	8566	62.7	69.3
014	WELLS/CFX-18	4	74	37	8504	64.3	70.8
017	DREW/CFX-18	5	74	35	8254	65.9	70.9
013	CFX-18//CCDR/9770532 DH2	5	78	36	7718	63.0	71.2
c.v. %		11.5	1.0	4.3	5.7	3.5	2.6
$LSD_{0.05}$		0.9	1.2	2.6	830	4.6	3.9

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

Table 2. Agronomic performance and yield of 2005 Clearfield advanced yield trials, Evangeline Parish, LA.

Entry	Source	Vigor*	Days to 50% Heading	Plant Height (inch)	Yield (lb/A @ 12%)	Narrow Brown†	Blast‡	Panicle Blight§
006	CFX-26/9702128	5	78	40	7373	4	5	4
017	DREW/CFX-18	5	78	37	7332	5	5	4
008	WELLS/CFX-18	5	79	39	7199	5	5	4
012	CFX-18//CCDR/9770532 DH2	5	79	38	7077	5	5	4
003	CFX-18//CCDR/9770532 DH2	5	82	40	6973	3	3	5
009	AR 1179/3/CPRS//…/4/CFX-18	5	85	40	6867	4	3	4
018	AR 1179/3/CPRS//…/4/CFX-18	4	84	40	6846	5	3	5
010	DREW/JEFF//CFX-18	5	80	36	6832	5	4	4
013	CFX-18//CCDR/9770532 DH2	5	80	38	6733	5	5	4
001	CFX-29//AR 1142/LA 2031	4	80	39	6729	3	5	4
002	CFX-18//CCDR/9770532 DH2	5	83	41	6565	3	3	3
007	CFX-29//AR 1142/LA 2031	5	79	36	6442	6	5	5
019	CL131	4	80	34	6431	6	5	5
014	WELLS/CFX-18	4	73	39	6430	4	6	4
004	WELLS/CFX-18	5	80	37	6263	4	4	5
005	DREW/JEFF//CFX-18	5	82	39	6261	4	3	3
015	CFX-18//CCDR/9770532 DH2	5	83	39	6251	4	3	5
020	CL161	5	83	39	6229	5	4	4
011	WELLS/CFX-18	6	83	38	5707	2	3	5
016	DREW/JEFF//CFX-18	6	81	36	5395	3	4	5
c.v. %		12.9	2.4	2.9	7.0	21.3	21.5	17.3
$LSD_{0.05}$		1.0	3.2	1.8	759	1.5	1.5	1.2

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.
†Narrow brown leaf spot rating 0-9, where 0 = no disease, 9 = maximum disease possible.
‡Rotten neck blast rating 0-9, where 0 = no disease, 9 = maximum disease possible.
§Panicle blight rating 0-9, where 0 = no disease, 9 = maximum disease possible.

Table 3. Agronomic and disease performance of 2005 Clearfield advanced yield trials, Jefferson Davis Parish, LA.

Entry	Source	Vigor*	Days to 50% Heading	Plant Height (inch)	Yield (lb/A @ 12%)	Milling (%)		Sheath Blight†
						Whole	Total	
004	WELLS/CFX-18	6	85	34	7859	53.3	71.8	8.0
011	WELLS/CFX-18	6	88	35	7400	59.3	70.9	8.0
010	DREW/JEFF//CFX-18	6	88	37	7320	60.6	71.3	7.3
006	CFX-26/9702128	5	86	36	7094	62.3	69.6	7.7
002	CFX-18//CCDR/9770532 DH2	5	89	38	7004	65.7	71.0	7.7
017	DREW/CFX-18	6	86	33	6983	61.0	73.3	8.0
001	CFX-29//AR 1142/LA 2031	5	88	39	6664	59.0	67.4	8.0
009	AR 1179/3/CPRS//…/4/CFX-18	5	92	40	6636	58.6	68.7	7.0
018	AR 1179/3/CPRS//…/4/CFX-18	5	90	38	6526	56.4	68.2	8.0
005	DREW/JEFF//CFX-18	5	88	38	6362	61.2	70.0	8.0
003	CFX-18//CCDR/9770532 DH2	5	87	37	6325	60.4	71.1	8.0
015	CFX-18//CCDR/9770532 DH2	5	89	37	6320	59.9	69.4	8.0
012	CFX-18//CCDR/9770532 DH2	5	86	34	6313	55.8	68.7	8.0
016	DREW/JEFF//CFX-18	5	87	36	6260	62.0	70.4	8.3
020	CL161	5	91	38	6254	57.8	68.0	8.0
008	WELLS/CFX-18	5	87	38	5952	56.9	66.0	8.7
007	CFX-29//AR 1142/LA 2031	5	87	34	5926	57.1	67.4	8.7
014	WELLS/CFX-18	5	86	37	5719	54.8	69.7	9.0
019	CL131	5	87	32	5661	59.1	66.6	8.7
013	CFX-18//CCDR/9770532 DH2	6	91	37	5227	51.0	63.8	8.0
c.v. %		8.1	1.3	4.7	7.2	3.8	1.6	4.2
$LSD_{0.05}$		0.7	1.9	2.8	767	4.6	2.4	0.6

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.
†Sheath blight rating 0-9, where 0 = no disease, 9 = maximum disease possible.

Table 4. Agronomic and milling performance of 2005 Clearfield advanced yield trials, Lake Arthur, Vermilion Parish, LA.

Entry	Source	Vigor*	Days to 50% Heading	Plant Height (inch)	Yield (lb/A @ 12%)	Milling (%) Whole	Milling (%) Total	Sheath Blight†	Blast‡
013	CFX-18//CCDR/9770532 DH2	5	85	38	7134	48.2	65.2	8.0	5.0
009	AR 1179/3/CPRS//…/4/CFX-18	5	86	41	6823	51.9	68.3	6.7	3.7
004	WELLS/CFX-18	6	80	39	6638	45.1	65.6	7.7	6.0
008	WELLS/CFX-18	5	81	39	6429	53.6	66.8	8.0	4.0
020	CL161	5	84	42	6152	56.4	67.5	8.0	5.0
003	CFX-18//CCDR/9770532 DH2	4	81	40	6134	55.4	68.5	8.0	4.7
019	CL131	5	80	35	6117	57.8	68.3	8.0	5.0
010	DREW/JEFF//CFX-18	6	82	38	6113	56.1	69.4	7.7	3.7
005	DREW/JEFF//CFX-18	5	83	40	6047	54.3	68.0	7.7	4.7
018	AR 1179/3/CPRS//…/4/CFX-18	5	86	42	6038	48.7	66.7	8.0	5.0
007	CFX-29//AR 1142/LA 2031	5	82	37	6032	52.7	66.1	8.0	5.7
014	WELLS/CFX-18	5	80	41	5861	46.1	64.0	8.0	5.7
002	CFX-18//CCDR/9770532 DH2	5	82	42	5816	56.8	64.5	7.7	5.0
006	CFX-26/9702128	5	80	40	5805	57.8	68.5	7.0	4.7
016	DREW/JEFF//CFX-18	5	85	39	5802	50.4	67.9	8.0	5.0
011	WELLS/CFX-18	5	84	39	5794	56.1	68.7	7.7	5.7
001	CFX-29//AR 1142/LA 2031	4	82	44	5715	55.6	67.3	8.0	5.0
012	CFX-18//CCDR/9770532 DH2	5	83	39	5707	58.0	69.6	8.0	4.3
015	CFX-18//CCDR/9770532 DH2	5	86	42	5563	56.4	69.3	7.0	4.7
017	DREW/CFX-18	5	81	41	5388	53.2	69.5	8.0	3.7
c.v. %		11.6	1.5	3.9	12.7	6.8	3.8	5.1	13.1
$LSD_{0.05}$		1.0	2.0	2.6	1273	7.6	5.3	0.7	1.0

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.
†Sheath blight rating 0-9, where 0 = no disease, 9 = maximum disease possible.
‡Rotten neck blast rating 0-9, where 0 = no disease, 9 = maximum disease possible.

Table 5. Agronomic performance and yield of 2005 Clearfield advanced yield trials, Pine Island, Vermilion Parish, LA.

Entry	Source	Days to 50% Heading	Plant Height (inch)	Yield (lb/A @ 12%)
003	CFX-18//CCDR/9770532 DH2	85	40	5873
006	CFX-26/9702128	85	41	5840
012	CFX-18//CCDR/9770532 DH2	85	38	5398
008	WELLS/CFX-18	84	40	5388
009	AR 1179/3/CPRS//…/4/CFX-18	85	43	5318
010	DREW/JEFF//CFX-18	85	41	5241
015	CFX-18//CCDR/9770532 DH2	85	42	5173
017	DREW/CFX-18	83	39	4962
018	AR 1179/3/CPRS//…/4/CFX-18	85	41	4900
013	CFX-18//CCDR/9770532 DH2	84	39	4880
002	CFX-18//CCDR/9770532 DH2	84	43	4829
020	CL161	86	41	4722
001	CFX-29//AR 1142/LA 2031	85	30	4332
007	CFX-29//AR 1142/LA 2031	84	38	4029
014	WELLS/CFX-18	83	41	3977
016	DREW/JEFF//CFX-18	84	39	3968
005	DREW/JEFF//CFX-18	84	41	3956
004	WELLS/CFX-18	83	37	3944
011	WELLS/CFX-18	83	39	3783
019	CL131	82	35	3685
c.v. %		1.7	12.9	7.8
$LSD_{0.05}$		2.3	8.4	608

Table 6. Agronomic performance and yield of 2005 Clearfield advanced yield trials, Richland Parish, LA.

Entry	Source	Days to 50% Heading	Plant Height (inch)	Yield (lb/A @ 12%)
006	CFX-26/9702128	77	35	7203
008	WELLS/CFX-18	80	36	7083
018	AR 1179/3/CPRS//…/4/CFX-18	80	38	7082
012	CFX-18//CCDR/9770532 DH2	78	34	6825
013	CFX-18//CCDR/9770532 DH2	80	36	6770
010	DREW/JEFF//CFX-18	78	36	6722
001	CFX-29//AR 1142/LA 2031	78	36	6600
014	WELLS/CFX-18	77	37	6592
016	DREW/JEFF//CFX-18	79	37	6585
009	AR 1179/3/CPRS//…/4/CFX-18	81	36	6560
015	CFX-18//CCDR/9770532 DH2	80	37	6472
017	DREW/CFX-18	78	36	6468
011	WELLS/CFX-18	79	34	6452
020	CL161	81	36	6443
007	CFX-29//AR 1142/LA 2031	79	34	6406
019	CL131	78	32	6365
005	DREW/JEFF//CFX-18	80	36	6244
002	CFX-18//CCDR/9770532 DH2	80	34	6143
003	CFX-18//CCDR/9770532 DH2	79	35	6137
004	WELLS/CFX-18	78	31	5788
c.v. %		1.1	4.5	4.6
$LSD_{0.05}$		1.4	2.6	498

Table 7. Agronomic and milling performance of 2005 Clearfield advanced yield trials, Rice Research Station, Crowley, LA.

Entry	Source	Vigor*	Days to 50% Heading	Plant Height (inch)	Yield (lb/A @ 12%)			Milling (%)	
					Main	Ratoon	Total	Whole	Total
003	CFX-18//CCDR/9770532 DH2	5	92	41	9693	882	10574	65.3	71.2
016	DREW/JEFF//CFX-18	5	93	42	9188	1367	10556	63.9	70.2
002	CFX-18//CCDR/9770532 DH2	5	94	41	8818	1276	10093	67.2	72.7
018	AR 1179/3/CPRS//…/4/CFX-18	5	95	44	9323	742	10064	65.7	72.2
013	CFX-18//CCDR/9770532 DH2	5	94	39	8995	1056	10051	64.6	70.6
012	CFX-18//CCDR/9770532 DH2	5	91	39	9522	394	9916	67.0	72.2
015	CFX-18//CCDR/9770532 DH2	5	93	41	9044	792	9836	66.1	72.1
011	WELLS/CFX-18	6	91	39	8889	945	9835	64.7	71.5
001	CFX-29//AR 1142/LA 2031	5	93	41	8927	855	9782	65.5	71.2
009	AR 1179/3/CPRS//…/4/CFX-18	5	96	41	8885	870	9756	66.9	72.0
019	CL131	5	92	36	8817	463	9280	67.3	72.0
006	CFX-26/9702128	5	91	41	8740	476	9216	63.4	69.7
017	DREW/CFX-18	6	90	39	8587	520	9107	68.1	72.6
020	CL161	5	95	42	8684	391	9074	65.5	70.6
014	WELLS/CFX-18	5	89	42	8276	751	9027	65.3	71.6
010	DREW/JEFF//CFX-18	6	93	42	8534	460	8993	67.2	73.2
007	CFX-29//AR 1142/LA 2031	6	92	38	8441	387	8829	65.4	71.4
004	WELLS/CFX-18	6	92	37	8371	360	8731	65.0	72.3
005	DREW/JEFF//CFX-18	6	96	41	7951	743	8695	64.5	70.9
008	WELLS/CFX-18	6	93	39	8249	288	8537	66.8	71.9
c.v.%		6.3	1.2	3.5	4.9	29.0	5.5	1.8	1.4
$LSD_{0.05}$		0.6	1.8	2.3	705	336	854	2.4	2.0

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

Table 8. Agronomic and milling performance of 2005 Clearfield preliminary yield trials, Group 1, Rice Research Station, Crowley, LA.

Entry	Source	Vigor*	Days to 50% Heading	Plant Height (inch)	Yield (lb/A @ 12%)			Milling (%)	
					Main	Ratoon	Total	Whole	Total
007	CFX-18//CCDR/9770532 DH2	5	81	41	10448	2598	13046	67.9	72.5
021	CFX-26/9702128	5	80	42	10628	2253	12882	63.1	69.7
014	CFX-26/9702128	5	80	41	9872	2770	12642	67.2	71.2
017	CFX-29//AR 1142/LA 2031	5	83	39	10754	1672	12426	68.5	73.3
004	WELLS/CFX-18	5	83	42	10251	2112	12363	65.1	72.7
005	WELLS/CFX-18	5	83	42	10323	2021	12344	65.5	73.2
016	CFX-29//AR 1142/LA 2031	5	85	41	9561	2666	12227	67.3	72.9
008	CFX-18//CCDR/9770532 DH2	5	81	42	9782	2008	11790	66.2	71.7
022	CFX-26/9702128	5	85	43	9876	1805	11682	62.8	69.2
023	CFX-26/9702128	5	85	41	9684	1900	11583	63.8	70.2
020	98IM0921/CFX-18	5	86	39	9636	1919	11555	65.7	72.3
002	CPRS/CFX-18	5	85	42	9765	1533	11298	67.2	71.5
013	CFX-26/9702128	5	87	40	9777	1408	11185	61.6	68.9
018	CFX-24/LLCCDR	5	82	43	8864	2093	10957	63.5	71.6
006	WELLS/CFX-18	5	80	40	9837	880	10718	63.6	70.5
009	AR 1179/3/CPRS//…/4/CFX-18	5	85	42	9605	1094	10699	65.4	71.3
003	CPRS/CFX-18	5	85	43	9593	1001	10593	67.9	71.7
025	CL131	5	83	38	9674	908	10583	68.1	75.5
001	CFX-29//AR 1142/LA 2031	5	83	42	9420	904	10324	65.5	71.3
015	CFX-26/9702128	5	80	40	8051	2229	10280	67.3	72.1
010	WELLS/CFX-18	5	84	38	9597	624	10221	64.7	74.5
011	CFX-22/98IM3291	5	83	42	9085	992	10077	66.2	72.8
012	CFX-22/98IM3291	5	83	41	9071	891	9962	64.6	71.4
024	CFX-29/CCDR	5	85	46	7863	1128	8991	65.1	70.5
019	CFX-24/LLCCDR	5	82	39	8378	587	8965	60.9	69.8
c.v.%		2.3	0.9	3.2	6.6	15.6	5.9	2.6	2.5
$LSD_{0.05}$		0.2	1.2	2.1	1039	410	1083	3.5	3.7

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

Table 9. Agronomic and milling performance of 2005 Clearfield preliminary yield trials, Group 2, Rice Research Station, Crowley, LA.

Entry	Source	Vigor*	Days to 50% Heading	Plant Height (inch)	Yield (lb/A @ 12%)			Milling (%)	
					Main	Ratoon	Total	Whole	Total
044	WELLS/CFX-18	5	82	40	10329	1852	12182	61.9	72.2
049	CFX-18//CCDR/9770532 DH2	5	83	41	10089	1813	11902	67.1	73.0
026	CFX-29/CCDR	5	82	41	10290	1593	11883	66.6	72.5
040	DREW/CFX-18	5	83	42	9723	1773	11496	62.8	73.3
031	CFX-29/CCDR	5	83	42	10043	1368	11411	68.7	73.5
042	DREW/CFX-18	5	86	41	9750	1616	11366	65.6	71.3
029	CFX-29/CCDR	5	83	42	9394	1705	11098	65.3	72.3
041	DREW/CFX-18	5	85	41	9579	1418	10996	65.9	72.3
033	CFX-29//AR 1142/LA 2031	5	84	43	9324	1563	10887	68.3	72.2
028	CFX-29/CCDR	5	83	42	9182	1642	10824	66.0	72.5
032	CFX-29//AR 1142/LA 2031	5	84	42	8948	1832	10779	66.4	71.8
048	CFX-18//CCDR/9770532 DH2	5	82	43	9667	1084	10751	68.9	74.1
034	GFMT/CFX-29	5	84	42	9129	1206	10335	65.6	70.7
030	CFX-29/CCDR	5	83	41	9587	494	10081	67.1	73.3
043	DREW/JEFF//CFX-18	5	81	42	8599	1293	9892	62.1	71.7
047	CFX-18//CCDR/9770532 DH2	5	81	44	7832	1940	9771	63.6	72.8
036	GFMT/CFX-29	5	82	39	8709	987	9696	67.1	73.3
050	CL161	5	85	45	8803	887	9689	66.2	71.9
046	CFX-18//CCDR/9770532 DH2	5	80	44	7218	1998	9217	62.9	71.9
035	GFMT/CFX-29	6	82	40	8407	713	9120	65.0	72.1
045	WELLS/CFX-18	6	79	36	7677	1443	9120	45.9	73.0
039	GFMT/CFX-29	5	84	41	8109	556	8666	61.5	72.8
027	CFX-29/CCDR	5	81	40	7978	286	8265	60.1	72.1
037	GFMT/CFX-29	5	85	43	7367	604	7971	64.8	72.8
038	GFMT/CFX-29	5	86	39	7463	298	7761	59.3	71.0
c.v.%		3.2	0.9	2.8	6.8	30.4	6.8	3.5	1.3
$LSD_{0.05}$		0.3	1.3	1.9	995	637	1140	4.7	2.0

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

Table 10. Agronomic and milling performance of 2005 Clearfield preliminary yield trials, Group 3, Rice Research Station, Crowley, LA.

Entry	Source	Vigor*	Days to 50% Heading	Plant Height (inch)	Yield (lb/A @ 12%)			Milling (%)	
					Main	Ratoon	Total	Whole	Total
074	CFX-26/9702128	5	81	41	9751	2580	12331	64.4	69.1
066	CFX-18//CCDR/9770532 DH2	5	84	41	10352	1874	12226	65.7	71.8
075	04CLPY 003	5	82	41	10496	1289	11785	61.3	70.4
068	9502008/3/CPRS//…/4/CFX18	5	83	42	10756	1026	11782	64.5	72.8
064	CPRS/97T1280 DH1//CFX-18	5	84	39	8805	2623	11428	65.6	72.1
054	DREW/CFX-18	5	87	43	9992	1293	11286	64.6	71.1
065	CPRS/97T1280 DH1//CFX-18	5	84	40	9172	1985	11158	64.1	75.6
070	CFX-24/98IM2551	5	82	41	9736	1391	11127	62.6	72.1
061	AR 1179/3/CPRS//…/4/CFX-18	5	84	45	9586	1457	11044	66.1	72.0
056	DREW/CFX-18	5	86	44	9499	1409	10909	64.0	71.2
063	9302065/DREW//CFX-18	5	83	41	9315	1530	10846	61.9	72.0
062	AR 1179/3/CPRS//…/4/CFX-18	5	86	41	9283	1426	10709	64.7	70.1
067	CFX-18/MBLE	5	85	43	9303	1392	10695	64.5	71.4
055	DREW/CFX-18	5	85	41	9240	1434	10674	63.2	70.3
059	CPRS/CFX-18	5	84	43	9801	782	10583	65.7	70.7
058	CPRS/CFX-18	5	86	43	9571	960	10531	66.4	70.8
057	DREW/CFX-18	5	87	41	9098	1370	10467	64.1	70.5
072	CFX18//CPRS/KBNT	5	85	41	9611	817	10428	66.4	71.8
060	AR 1179/3/CPRS//…/4/CFX-18	5	86	43	9527	855	10382	65.4	70.5
052	CFX-18/MBLE	5	78	38	9535	790	10325	63.6	74.1
051	CFX-18/MBLE	5	86	42	9029	1085	10114	62.3	71.9
069	CFX-29//AR 1142/LA 2031	5	83	44	8993	788	9782	63.8	70.5
071	CFX18//CPRS/KBNT	5	84	42	9193	465	9657	67.9	72.9
073	CFX18//CPRS/KBNT	5	83	45	7990	1082	9072	63.4	70.6
053	GFMT/CFX-29	5	86	43	7110	557	7667	52.6	73.3
c.v.%		4.5	1.2	2.8	4.5	32.1	6.0	2.4	2.0
$LSD_{0.05}$		0.4	1.7	1.9	690	678	1045	3.2	3.0

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

Table 11. Agronomic and milling performance of 2005 Clearfield preliminary yield trials, single plot, Rice Research Station, Crowley, LA.

Entry	Source	Vigor*	Days to 50% Heading	Plant Height (inch)	Yield (lb/A @12%)	Milling (%)	
						Whole	Total
009	CCDR/CLR 11	4	69	38	7554	68.5	72.2
011	CCDR/CLR 11	3	71	34	7411	65.4	71.5
033	CFX-18/TACAURI	6	72	35	7288	64.9	70.6
017	TACAURI/3/CPRS//…/4/CFX-18	6	73	39	7285	60.3	68.4
005	CCDR/CLR 11	4	70	35	7277	66.9	72.4
018	9502008-A/TACAURI//CFX-18	3	70	36	7213	70.1	74.3
023	9502008-A/TACAURI//CLR 5	5	72	38	7156	68.4	73.0
019	CCDR/98PIM0151//CLR 7	3	71	34	7034	68.4	72.6
008	CCDR/CLR 11	4	69	34	6916	66.5	71.2
024	9502008-A/TACAURI//CLR 5	5	70	37	6819	68.2	73.9
010	CCDR/CLR 11	4	69	33	6791	68.1	73.5
016	CPRS/CLR 11	5	71	38	6784	69.1	72.1
035	CL161	3	75	36	6757	69.2	73.9
015	FRANCIS/CLR 22	4	69	39	6754	68.6	73.8
014	FRANCIS/CLR 13	4	73	37	6745	69.4	74.3
029	KATY/…/3/9502008/4/CLR 6	4	72	33	6709	66.9	71.4
022	CCDR/98PIM0151//CLR 12	4	70	36	6699	68.2	72.5
021	CCDR/98PIM0151//CLR 7	4	71	37	6539	65.6	72.0
006	CCDR/CLR 11	4	69	32	6483	67.1	72.5
036	CLPY 003	4	71	29	6466	66.4	73.1
034	CL131	5	72	28	6464	68.6	72.6
013	CCDR/CFX-18	4	70	38	6447	65.7	72.5
025	TACAURI/3/CPRS//…/4/CLR 6	5	71	39	6399	67.7	72.1
020	CCDR/98PIM0151//CLR 7	4	70	38	6384	66.8	72.2
030	KATY/CPRS//…/3/9502008/4/CLR 6	4	72	37	6382	69.2	73.2
012	CCDR/CFX-18	4	71	38	6316	68.0	73.0
004	9302065/CLR 7	4	74	30	6107	67.0	72.0
026	KATY/CPRS//…/3/9502008/4/CLR 6	4	72	34	6079	67.9	73.2
007	CCDR/CLR 11	3	69	32	6050	63.6	71.0
031	KATY/CPRS//…/3/9502008/4/CLR 6	5	72	34	6014	66.2	72.6
028	KATY/CPRS//…/3/9502008/4/CLR 6	3	73	37	5849	67.6	72.2
003	LGRU/CLR 5	5	73	33	5840	64.3	70.9
027	KATY/CPRS//…/3/9502008/4/CLR 6	3	74	33	5614	67.3	73.3
032	KATY/CPRS//…/3/9502008/4/CLR 9	5	72	31	5367	64.3	73.3
002	LGRU/CLR 5	6	73	34	4974	66.1	71.2
001	JKSN/CLR6	5	65	32	4516	67.2	72.8

* Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

Table 12. Agronomic and milling performance of 2005 Clearfield preliminary yield trials, Puerto Rico entries, Date 1, Rice Research Station, Crowley, LA.

Entry	Source	Vigor*	Days to 50% Heading	Plant Height (inch)	Lodging (%)	Yield (lb/A @12%)	Milling (%)	
							Whole	Total
032	CFX18/LM-1	5	88	45		9224	64.4	70.4
031	CFX18/LCSN	6	86	45		9139	64.7	70.2
008	CCDR/CFX18	6	88	47		9115	63.0	70.1
011	CCDR/CFX18	6	87	42		9034	65.1	71.7
004	CPRS/97T1280DH1/CFX18	5	90	45		8834	60.0	68.4
007	CFX18/LM-1	6	86	42		8812	65.6	71.7
015	JPTR/CL161	7	84	44	40	8769	65.5	70.2
027	CFX18/LM-1	7	89	38		8701	65.7	71.8
013	CCDR/CFX18	7	88	44		8692	62.8	69.3
010	CCDR/CFX18	6	86	44		8669	64.1	70.9
014	CCDR/CFX18	5	84	41		8652	66.1	74.0
025	CFX18/LM-1	7	89	49	35	8637	62.6	70.8
026	CFX18/LM-1	6	85	45		8635	66.2	71.2
009	CCDR/CFX18	5	86	44		8559	66.6	72.6
012	CCDR/CFX18	5	85	42		8528	65.3	71.8
003	CFX18/LCSN	7	89	44		8509	62.1	71.3
002	CFX18/LCSN	7	90	46		8444	63.3	70.3
022	04CLPY 003	4	89	39		8391	65.6	71.7
016	JPTR/CL161	7	83	44	40	8391	65.2	69.4
029	CCDR/CFX18	6	87	42		8385	64.0	70.8
020	CL131	3	89	32		8376	70.2	74.4
021	CL161	3	89	40	15	8366	65.7	72.9
033	JPTR/CL161	6	87	45		8343	65.7	71.2
005	CFX18/LM-1	7	87	39		8319	63.6	71.8
028	CCDR/CFX18	6	85	42		8266	66.1	71.7
006	CFX18/LM-1	6	88	39		8215	61.4	72.0
024	CFX18/LCSN	6	89	44	20	8154	61.3	68.7
030	JPTR/CL161	6	84	47		8145	66.1	70.5
017	JPTR/CL161	5	83	41		8143	66.3	70.8
018	BNGL/SRICO/CFX18	6	84	42		8092	62.6	69.8
023	CFX18/LCSN	6	87	45		7898	65.6	71.5
001	CFX18/LCSN	6	86	44		7666	65.9	72.6
019	BNGL/SRICO/CFX18	6	86	44		7615	62.1	69.8
c.v.%		13.9	2.0	3.5		8.7	2.6	1.4
$LSD_{0.05}$		1.6	3.4	3.1		1496	3.4	2.0

* Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

Table 13. Agronomic and milling performance of 2005 Clearfield preliminary yield trials, Puerto Rico entries, Date 2, Rice Research Station, Crowley, LA.

Entry	Source	Vigor*	Days to 50% Heading	Plant Height (inch)	Yield (lb/A @12%)
022	04CLPY 003	4	78	35	8635
020	CL131	5	78	32	8267
021	CL161	4	80	36	8243
013	CCDR/CFX18	6	78	38	7610
026	CFX18/LM-1	6	79	39	7349
030	JPTR/CL161	7	76	39	7301
012	CCDR/CFX18	7	75	37	7299
018	BNGL/SRICO/CFX18	6	74	38	7218
014	CCDR/CFX18	7	78	38	7121
009	CCDR/CFX18	7	77	37	6850
019	BNGL/SRICO/CFX18	7	74	38	6824
016	JPTR/CL161	7	77	39	6746
015	JPTR/CL161	8	76	39	6687
007	CFX18/LM-1	6	78	38	6656
028	CCDR/CFX18	7	77	37	6404
011	CCDR/CFX18	7	76	38	6367
010	CCDR/CFX18	8	73	37	6356
008	CCDR/CFX18	7	78	38	6205
025	CFX18/LM-1	7	77	39	6060
005	CFX18/LM-1	7	75	35	5785
029	CCDR/CFX18	7	76	40	5776
006	CFX18/LM-1	7	77	35	5720
004	CPRS/97T1280DH1/CFX18	6	79	36	5703
027	CFX18/LM-1	8	77	35	5612
024	CFX18/LCSN	8	76	37	5375
001	CFX18/LCSN	7	75	38	5026
017	JPTR/CL161	7	73	36	4928
023	CFX18/LCSN	8	77	35	4679
003	CFX18/LCSN	8	78	36	4590
002	CFX18/LCSN	8	78	38	3083

* Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

LIBERTY LINK EXPERIMENTAL LINES

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These studies were conducted to evaluate the agronomic performance of transgenic lines that contain a gene for resistance to the herbicide glufosinate. The combination of the resistant line and the use of the herbicide can be used in a program to selectively eliminate red rice in a commercial rice field.

These lines were evaluated in a typical breeding project trial to measure yield, milling, and agronomic performance. However, the test was treated with the herbicide to evaluate the resistance level. In each of the studies, glufosinate was applied at a rate of 0.73 lb ai/A at the 3- to 4-leaf stage then again at the early tillering stage. Standard agronomic practices were used for each location.

Ten advanced experimental lines, along with 14 checks, were tested at five on- and off-station locations as companion studies to the Commercial-Advanced tests. All the preliminary tests were carried out at the Rice Research Station. The experiment design was a randomized complete block with two or three replications for each location. Plots size was 4.67 x 16 ft. Results of advanced tests are listed in tables 1 to 5, and the preliminary tests are presented in tables 6 to 22.

Table 1. Agronomic and milling performance of Liberty linked advanced lines, Acadia Parish, LA, 2005.

Entry	Source	Vigor*	Days to 50% Heading	Plant Height (inch)	Yield (lb/A @ 12%)
023	CF-XP730	5	78	46	11033
008	CL131	4	77	33	8797
024	XP716	6	82	46	8714
022	CF-XL8	5	79	43	8508
010	02-ACS-19-116	3	72	37	8402
015	02-ACS-20-93	4	79	39	8371
009	CL161	4	79	36	7873
013	02-AMS-20-76	5	77	37	7212
017	Jupiter	5	81	34	7131
002	Co14	4	75	36	7078
001	Co10	5	75	36	6977
019	LL-6	4	78	36	6670
007	Wells	4	78	36	6645
014	02-AMS-25-27	5	77	35	6568
011	02-ACS-8-76	4	73	34	6568
012	02-AMS-22-16	4	74	30	5555
018	LL-001	4	81	35	5407
020	LL-7	6	74	31	5277
004	Cocodrie	5	75	35	5215
003	Cheniere	5	77	32	5183
021	LL-9	5	76	32	5141
016	Bengal	6	79	33	3567
005	GF7				
006	GF8				
c.v. %		10.0	1.9	4.7	14.1
$LSD_{0.05}$		0.8	2.4	2.8	1604

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

Table 2. Agronomic and milling performance of Liberty linked advanced lines, Evangeline Parish, LA, 2005.

Entry	Source	Vigor*	Days to 50% Heading	Plant Height (inch)	Yield (lb/A @ 12%)	Narrow brown†	Blast‡	Panicle Blight§
023	CF-XP730	5	82	46	11941	0	0	1
024	XP716	5	88	46	11470	0	0	1
022	CF-XL8	5	81	46	10164	0	1	1
017	Jupiter	6	84	37	7971	0	1	1
007	Wells	4	86	42	7942	0	2	3
001	Co10	5	79	40	7887	3	3	5
002	Co14	6	82	41	7883	4	4	5
004	Cocodrie	5	80	39	7761	4	5	3
014	02-AMS-25-27	5	82	38	7584	2	4	4
013	02-AMS-20-76	5	83	40	7517	2	3	4
011	02-ACS-8-76	5	78	39	7498	2	3	4
015	02-ACS-20-93	5	87	41	7489	1	4	3
006	GF8	7	86	44	6969	0	2	2
008	CL131	4	79	35	6666	6	5	4
009	CL161	6	86	40	6348	5	5	4
003	Cheniere	6	83	35	6315	4	5	3
021	LL-9	6	81	36	5946	0	0	1
010	02-ACS-19-116	6	80	39	5931	2	5	4
012	02-AMS-22-16	5	79	35	5768	2	3	4
019	LL-6	5	82	38	5644	1	3	4
020	LL-7	6	76	35	5399	1	3	5
018	LL-001	5	85	36	5075	1	3	5
005	GF7	8	88	37	5011	1	2	4
016	Bengal	6	83	39	4861	1	3	4
c.v. %		11.1	2.4	3.9	8.0	46.9	33.4	23.7
$LSD_{0.05}$		1.0	3.2	2.5	952	1.4	1.6	1.3

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.
†Narrow brown leaf spot rating 0-9, where 0 = no disease, 9 = maximum disease possible.
‡Rotten neck blast rating 0-9, where 0 = no disease, 9 = maximum disease possible.
§Panicle blight rating 0-9, where 0 = no disease, 9 = maximum disease possible.

Table 3. Agronomic and milling performance of Liberty linked advanced lines, Jefferson Davis Parish, LA, 2005.

Entry	Source	Vigor*	Days to 50% Heading	Plant Height (inch)	Yield (lb/A @ 12%)	Milling (%) Whole	Milling (%) Total	Sheath Blight†
024	XP716	5	93	47	9579	68.2	71.5	4.7
023	CF-XP730	6	86	45	9521	62.3	72.5	6.7
010	02-ACS-19-116	5	83	39	8636	55.8	73.6	6.3
022	CF-XL8	6	86	43	8625	59.8	72.7	7.3
017	Jupiter	5	91	39	8276	62.7	66.5	6.7
005	GF7	7	91	37	8147	61.9	72.2	5.3
007	Wells	4	89	44	7812	62.5	71.5	7.7
004	Cocodrie	5	86	37	7737	63.8	69.2	8.0
002	Co14	5	89	37	7724	62.1	69.2	7.7
012	02-AMS-22-16	4	84	36	7677	56.2	74.5	7.0
013	02-AMS-20-76	5	88	38	7599	58.8	70.8	7.7
019	LL-6	5	88	37	7400	60.7	74.2	7.3
011	02-ACS-8-76	4	84	38	7352	63.9	71.3	7.0
016	Bengal	5	92	41	7231	61.4	71.2	6.3
018	LL-001	4	92	36	7162	69.5	73.2	6.3
015	02-ACS-20-93	4	89	41	7133	57.1	70.7	8.0
001	Co10	5	87	36	7121	65.5	72.6	8.0
006	GF8	6	90	41	7119	68.0	72.8	6.3
014	02-AMS-25-27	5	89	36	7077	59.2	70.0	8.0
003	Cheniere	5	89	37	7044	62.7	70.5	7.7
020	LL-7	6	79	35	6721	56.3	69.3	6.7
008	CL131	4	86	32	6469	62.1	68.6	9.0
009	CL161	5	90	38	6408	64.0	70.0	8.0
021	LL-9	5	88	37	6229	55.8	73.3	6.7
c.v. %		9.1	1.5	4.9	7.9	4.7	1.6	7.2
$LSD_{0.05}$		0.8	2.1	3.1	990	5.9	2.3	0.8

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.
†Sheath blight rating 0-9, where 0 = no disease, 9 = maximum disease possible.

Table 4. Agronomic and milling performance of Liberty linked advanced lines, Lake Arthur, Vermilion Parish, LA, 2005.

Entry	Source	Vigor*	Days to 50% heading	Plant Height (inch)	Yield (lb/A @ 12%)	Milling (%) Whole	Milling (%) Total	Sheath Blight†	Blast‡
022	CF-XL8	6	82	47	8607	56.0	70.8	7	2
023	CF-XP730	6	83	49	8468	57.1	70.0	5	2
024	XP716	6	88	50	8265	57.5	67.2	4	2
002	Co14	5	81	31	8149	58.8	68.9	7	4
001	Co10	5	80	40	8042	61.6	68.7	7	4
017	Jupiter	5	85	41	7973	59.8	70.3	7	2
004	Cocodrie	5	80	40	7277	62.1	70.5	8	4
010	02-ACS-19-116	5	78	43	7163	55.6	69.2	7	6
011	02-ACS-8-76	4	79	40	7134	60.2	70.2	7	4
003	Cheniere	5	83	39	7046	59.2	69.4	7	3
014	02-AMS-25-27	5	85	42	7006	58.7	68.7	7	4
013	02-AMS-20-76	5	85	42	6703	55.8	66.3	7	3
007	Wells	4	85	45	6664	52.2	66.3	6	5
012	02-AMS-22-16	5	78	39	6572	60.1	72.2	8	4
009	CL161	4	86	42	6162	56.1	65.5	8	4
018	LL-001	5	85	40	6108	53.8	67.5	6	6
008	CL131	4	82	35	6079	57.4	67.6	8	5
006	GF8	6	83	46	6072	62.2	69.8	6	4
015	02-ACS-20-93	4	86	44	5931	48.2	68.3	8	5
019	LL-6	5	85	41	5759	56.9	67.0	6	6
005	GF7	7	85	42	5735	50.5	65.9	5	7
016	Bengal	5	85	46	5336	55.0	64.1	6	5
021	LL-9	6	84	38	4897	55.0	67.4	6	6
020	LL-7	6	77	39	4417	52.9	62.9	7	5
c.v. %		10.6	1.5	4.0	6.1	8.6	3.4	8.9	16.0
$LSD_{0.05}$		0.9	2.1	2.7	672	10.1	4.7	1.0	1.1

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.
†Sheath blight rating 0-9, where 0 = no disease, 9 = maximum disease possible.
‡Rotten neck blast rating 0-9, where 0 = no disease, 9 = maximum disease possible.

Table 5. Agronomic and milling performance of Liberty linked advanced lines, Rice Research Station, Crowley, LA, 2005.

Entry	Source	Vigor*	Days to 50% Heading	Plant Height (inch)	Lodging (%)	Yield (lb/A @ 12%)	Milling (%)	
							Whole	Total
024	XP716	6	87	48		9445	66.2	70.6
002	Co14	5	85	40		9320	64.9	71.1
017	Jupiter	6	85	38		9187	63.1	70.7
015	02-ACS-20-93	4	87	43		9162	59.7	71.6
022	CF-XL8	6	85	48	53	9115	58.1	70.0
014	02-AMS-25-27	5	84	43		9093	61.1	68.1
004	Cocodrie	5	82	40		8912	64.9	71.9
012	02-AMS-22-16	5	80	35		8772	66.0	71.9
011	02-ACS-8-76	5	79	41	23	8611	66.1	72.0
008	CL131	4	85	36		8496	67.7	73.2
001	Co10	5	84	39		8488	64.4	71.9
013	02-AMS-20-76	6	85	41		8354	64.5	72.1
007	Wells	6	87	41		8235	59.5	71.8
009	CL161	5	88	42	10	8040	65.5	71.4
019	LL-6	5	83	40		8002	61.7	72.6
021	LL-9	5	82	36		7884	67.5	71.7
023	CF-XP730	5	84	48	80	7878	62.3	70.7
020	LL-7	6	80	38		7807	63.8	71.0
018	LL-001	5	87	37		7501	68.8	73.5
003	Cheniere	6	85	37		6915	62.0	72.0
010	02-ACS-19-116	5	80	40		6737	45.2	75.0
005	GF7	6	87	39		6669	61.5	70.9
006	GF8	7	86	41		6425	64.8	71.0
016	Bengal	6	85	39		6344	64.3	69.6
c.v.%		8.1	2.1	4.0		9.8	6.5	1.3
$LSD_{0.05}$		0.7	2.9	2.6		1311	8.5	2.0

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

Table 6. Agronomic and milling performance of Liberty linked lines, Group Y3-20 LYB, Date 1, Rice Research Station, Crowley, LA, 2005.

Entry	Source	Vigor*	Days to 50% Heading	Plant Height (inch)	Lodging (%)	Yield (lb/A @ 12%)	Milling (%) Whole	Milling (%) Total
024	Co14	5	84	41		9844	63.9	71.4
023	Co10	5	84	42		9243	64.9	72.4
006	Wells*3/LLBengal62-98LL601-800	6	86	49		8722	62.0	71.5
003	Wells*3/LLBengal62-98LL601-800	6	86	48		8568	58.4	70.4
005	Wells*3/LLBengal62-98LL601-800	5	86	50		8375	60.3	71.9
013	Wells/3/Drew/L202//299-9	5	81	49		8345	65.9	71.2
009	Wells*3/Bengal62-98PLL601-800	5	85	47		8331	65.9	72.9
001	Coco/2/Adair/L203//295-27	6	82	44	13	8235	65.1	72.3
008	Wells*3/LLBengal62-98LL601-800	6	87	48		8179	64.0	73.5
011	Wells/3/L202/Irga 414//LL300-9	6	84	45		8152	62.1	70.6
007	Wells*3/LLBengal62-98LL601-800	6	85	50		8067	60.4	72.5
021	Cyp / Alan/3/H239-35-1-3-1 / L201 // 295-2	6	84	37		8052	61.0	71.3
004	Wells*3/LLBengal62-98LL601-800(5##)	6	88	46		7874	57.4	71.6
017	Jeff / L203//D9	5	79	37		7668	59.0	70.4
020	Jod / Coco/3/Coco / L204 // Bengal OT 298-9	5	86	41		7242	59.5	68.5
014	Ahrent/3/L202/Lagrue 12//295-39	6	80	45	27	7196	58.7	67.5
010	Cocodrie/3/L204/Jasmine 85//LL299-2	6	84	42	30	7185	61.4	72.2
016	Francis/3/Litton / L202 // 299-10	6	86	40		7136	58.4	69.7
018	Coco / L204/3/87-Y-550 / Lag 13 // 295-64	5	80	42	23	7101	60.6	70.5
002	Drew / Priscilla/3/Mad / 87-Y-550 // 295-23	6	81	46		7007	63.6	66.7
015	Francis/3/Taim / Cyp // 299-9	6	81	44		6997	48.8	69.5
022	Z86-44 / Cyp//Tac / AC 99-2006	6	86	46	23	5956	54.4	70.9
019	Jod / Coco/3/H239-35-1-3-1 / L201 // 295-2	6	84	41	13	5606	57.3	72.5
012	Wells/3/Drew/L202//299-9	5	85	50	90	5190	62.1	68.6
c.v.%		9.6	1.0	4.0		9.3	7.7	2.1
$LSD_{0.05}$		0.9	1.4	2.9		1168	9.7	3.1

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

Table 7. Agronomic and milling performance of Liberty linked lines, Group Y3-20 LYB, Date 2, Rice Research Station, Crowley, LA, 2005.

Entry	Source	Vigor*	Days to 50% Heading	Plant Height (inch)	Yield (lb/A @ 12%)	Milling (%) Whole	Milling (%) Total	Blast†
023	Co10	4	84	39	8391	62.7	70.4	4
024	Co14	4	87	43	8128	61.4	69.6	4
013	Wells/3/Drew/L202//299-9	5	84	43	7575	64.0	72.1	5
007	Wells*3/LLBengal62-98LL601-800	6	89	43	7351	52.3	68.7	3
010	Cocodrie/3/L204/Jasmine 85//LL299-2	5	85	42	7285	59.3	71.8	3
014	Ahrent/3/L202/Lagrue 12//295-39	5	81	43	7236	60.1	70.3	4
012	Wells/3/Drew/L202//299-9	5	89	46	7176	59.5	68.7	3
001	Coco/2/Adair/L203//295-27	6	85	38	7059	61.4	70.6	4
009	Wells*3/Bengal62-98PLL601-800	4	88	44	6920	62.2	72.1	4
003	Wells*3/LLBengal62-98LL601-800	5	90	45	6840	52.3	68.9	4
016	Francis/3/Litton / L202 // 299-10	5	89	40	6787	52.3	70.3	5
005	Wells*3/LLBengal62-98LL601-800	5	91	47	6699	53.1	67.8	3
015	Francis/3/Taim / Cyp // 299-9	6	83	43	6678	55.1	69.6	5
018	Coco / L204/3/87-Y-550 / Lag 13 // 295-64	5	84	40	6581	61.9	71.2	4
021	Cyp / Alan/3/H239-35-1-3-1 / L201 // 295-2	5	84	32	6573	58.1	71.6	5
011	Wells/3/L202/Irga 414//LL300-9	6	87	44	6523	60.9	70.0	2
017	Jeff / L203//D9	5	81	36	6050	56.0	71.3	5
008	Wells*3/LLBengal62-98LL601-800	5	92	43	6040	52.9	68.7	4
022	Z86-44 / Cyp//Tac / AC 99-2006	5	88	45	6008	56.1	71.3	3
006	Wells*3/LLBengal62-98LL601-800	5	91	44	5978	54.3	68.9	4
004	Wells*3/LLBengal62-98LL601-800(5##)	5	93	44	5918	46.1	65.5	4
020	Jod / Coco/3/Coco / L204 // Bengal OT 298-9	5	87	35	5886	54.2	66.1	5
002	Drew / Priscilla/3/Mad / 87-Y-550 // 295-23	5	87	39	5846	61.0	69.2	3
019	Jod / Coco/3/H239-35-1-3-1 / L201 // 295-2	6	85	37	5086	62.7	72.8	4
c.v. %		13.1	1.4	4.6	8.2	5.4	1.7	34.6
$LSD_{0.05}$		1.1	2.0	3.2	900	6.4	2.4	2.2

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

† Rotten neck blast rating 0-9, where 0 = no disease, 9 = maximum disease possible.

Table 8. Agronomic and milling performance of Liberty linked lines, Group Y3-30 LYB, Date 1, Rice Research Station, Crowley, LA, 2005.

Entry	Source	Vigor*	Days to 50% Heading	Plant Height (inch)	Lodging (%)	Yield (lb/A @ 12%)	Milling (%) Whole	Milling (%) Total
023	Co10	5	84	42		9348	65.6	72.3
024	Co14	5	85	42		9008	64.9	72.3
001	Coco / L204/3/I409 / Lac // 295-2	6	85	42		8956	62.8	70.8
018	Wells/3/Tacauri/Cocodrie//299-3	6	86	40		8150	55.4	69.9
013	Wells*3/LLBC3F3Cocodrie (Key 257)	5	87	48		8068	62.2	72.6
016	Ahrent*3/LLBC3F3Cypress (Key 256) MG	5	84	41	10	8054	61.5	70.2
006	Wells/LL-BC3F3 Cocodrie	5	88	47		7821	58.5	68.6
014	Wells*3/LLBengal62-98LL601-800	6	89	49		7594	58.1	69.4
003	Ahrent *3/LL-BC3F3 Cypress (Key 256)	6	84	40		7555	55.9	70.1
004	Francis*3/LL-BC3F3 Cypress (Key 256)	6	87	43		7419	58.7	68.9
008	Francis/3/Calbelle/Jefferson//300-11	6	88	45		7403	56.9	68.1
015	Wells*3/LLBengal62-98LL601-800	6	88	46		7360	56.9	71.3
009	L201/KB4/3/I409 / Lac // 295-2	5	85	49		7281	56.9	68.1
021	Saber /2/ Millie / L203 // LL295-26	5	87	45		7195	60.0	67.0
017	Francis*3/LL Bengal62 98LL601-800	6	86	46		7178	58.9	70.0
011	Zhe 733 / L205 // LL-601	4	85	40		7116	46.8	71.8
005	Coco//LSBR-33/Tadukan//295-41	5	88	44		6977	63.4	69.2
020	Z86-44 / Cyp//LL Drew (vs)	5	87	45		6840	61.7	69.6
002	Tacauri / Lagrue // LL-601	5	87	50		6756	61.3	70.8
010	Jeff / L202 /2/ RT7015 / AC 99-2006	5	86	40		6591	55.2	69.3
019	Francis/3/Taim/Drew//295-84	5	85	49	30	6419	57.9	69.0
022	Francis/*2/ LL-Cypress	5	88	46		6328	49.8	67.5
012	Tacauri / AC 99-2006	6	86	46		5730	52.7	62.0
007	Francis/3/L202/Katy//295-18	6	84	44	90	5197	63.6	69.7
c.v.%		10.5	1.3	3.8		8.0	4.7	2.5
$LSD_{0.05}$		0.9	1.8	2.8		964	5.7	3.6

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

Table 9. Agronomic and milling performance of Liberty linked lines, Group Y3-30 LYB, Date 2, Rice Research Station, Crowley, LA, 2005.

Entry	Source	Vigor*	Days to 50% Heading	Plant Height (inch)	Yield (lb/A @ 12%)	Milling (%) Whole	Milling (%) Total	Blast†
024	Co14	4	87	41	7305	62.4	69.4	4
023	Co10	5	87	40	7209	61.2	69.3	5
008	Francis/3/Calbelle/Jefferson//300-11	6	91	43	6272	48.1	64.7	6
001	Coco / L204/3/I409 / Lac // 295-2	6	88	40	5854	61.8	68.7	3
007	Francis/3/L202/Katy//295-18	6	88	41	5678	63.6	69.5	2
013	Wells*3/LLBC3F3Cocodrie (Key 257)	4	94	44	5667	51.6	66.1	6
009	L201/KB4/3/I409 / Lac // 295-2	5	89	41	5635	53.0	63.6	6
018	Wells/3/Tacauri/Cocodrie//299-3	6	89	37	5526	48.6	65.6	4
006	Wells/LL-BC3F3 Cocodrie	6	91	44	5466	49.5	62.8	5
021	Saber /2/ Millie / L203 // LL295-26	5	91	41	5422	55.3	65.2	3
019	Francis/3/Taim/Drew//295-84	5	88	43	5386	54.6	65.9	7
005	Coco//LSBR-33/Tadukan//295-41	5	89	40	5342	60.3	67.5	5
011	Zhe 733 / L205 // LL-601	5	87	37	5269	54.5	71.0	5
022	Francis/*2/ LL-Cypress	6	92	42	5265	47.7	66.6	4
014	Wells*3/LLBengal62-98LL601-800	5	94	47	5263	47.1	63.5	5
016	Ahrent*3/LLBC3F3Cypress (Key 256) MG	6	87	42	5240	54.1	66.7	3
004	Francis*3/LL-BC3F3 Cypress (Key 256)	6	88	38	5015	51.2	64.9	6
020	Z86-44 / Cyp//LL Drew (vs)	5	92	44	4997	56.7	67.0	5
017	Francis*3/LL Bengal62 98LL601-800	5	88	43	4648	52.7	63.5	7
003	Ahrent *3/LL-BC3F3 Cypress (Key 256)	7	88	38	4621	57.8	68.1	3
015	Wells*3/LLBengal62-98LL601-800	5	94	43	4570	35.9	59.4	5
002	Tacauri / Lagrue // LL-601	5	91	46	4547	54.1	65.9	6
010	Jeff / L202 /2/ RT7015 / AC 99-2006	5	88	37	4052	52.7	65.5	5
012	Tacauri / AC 99-2006	5	92	46	3117	31.9	56.5	7
c.v. %		11.6	1.4	5.9	10.2	6.4	3.1	19.9
$LSD_{0.05}$		1.0	2.1	4.0	891	7.0	4.3	1.6

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

† Rotten neck blast rating 0-9, where 0 = no disease, 9 = maximum disease possible.

Table 10. Agronomic and milling performance of Liberty linked lines, Group Y3-160 LYB, Date 1, Rice Research Station, Crowley, LA, 2005.

Entry	Source	Vigor*	Days to 50% Heading	Plant Height (inch)	Lodging (%)	Yield (lb/A @ 12%)	Milling (%) Whole	Milling (%) Total
022	LL7	4	83	40		8188	55.5	71.0
019	Krose//LL-601/Lafitte	4	78	42	70	7535	65.1	70.8
021	LL6	5	79	37		7435	62.2	67.8
024	LL-001	5	83	38		7360	59.4	67.9
023	LL9	5	82	38		7310	64.1	71.1
003	583 // M204 / LL-601	5	78	41		7184	54.1	64.4
018	583 // Bengal / LL-601	5	80	42		7074	60.2	68.8
007	583 // Arborio Precoce / LL-401	4	76	40		6500	57.4	67.3
002	M103 / M102 / LL-601	6	78	42		6438	53.9	63.8
009	583 // Sesia / LL-601	4	80	44		6397	60.1	67.4
005	247 // M202 / LL-601	6	75	39		6318	59.7	68.8
017	M205 // M202 / LL-601	5	77	38	27	6073	65.2	69.1
010	247 // M202 / LL-601	5	79	42		6052	57.9	66.0
013	M202 / Bengal // LL-601	5	78	40	23	6021	64.9	70.6
006	Gulfmont / AC 99-2006	5	73	39	53	5994	64.9	70.1
012	247 // M202 / LL-601 (NICE)	6	76	40	90	5830	64.9	68.6
001	M202 / LL-601 // Valencia	4	79	44	60	5677	59.0	69.0
016	M202 / Bengal // LL-601 (SOUTH)	5	76	40		5528	49.9	67.2
020	583 // S101 / LL-601	5	81	41	27	5499	61.2	68.5
004	M205 // M202 / LL-601	5	78	40	70	5366	60.5	70.0
011	247 // M202 / LL-601	5	79	37	90	5348	56.5	66.6
015	583 // M202 / LL-401	5	79	41	77	5135	60.2	69.2
014	247 // M202 / LL-601	5	77	38	30	4905	56.9	67.3
008	M401//78:18347/LL-401	5	79	43	90	4520	48.0	64.9
c.v.%		9.1	1.4	4.4		12.0	6.9	2.6
$LSD_{0.05}$		0.7	1.9	2.9		1227	8.4	3.7

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

Table 11. Agronomic and milling performance of Liberty linked lines, Group Y3-160 LYB, Date 2, Rice Research Station, Crowley, LA, 2005.

Entry	Source	Vigor*	Days to 50% Heading	Plant Height (inch)	Yield (lb/A @ 12%)	Milling (%) Whole	Milling (%) Total	Blast†
019	Krose//LL-601/Lafitte	3	79	39	7911	62.8	71.3	5
022	LL7	4	82	38	7220	58.8	70.6	5
003	583 // M204 / LL-601	4	76	37	6275	53.5	69.1	7
024	LL-001	4	83	35	6242	62.1	68.6	6
015	583 // M202 / LL-401	4	77	39	6193	49.5	70.0	6
023	LL9	6	81	35	5628	52.3	70.9	4
020	583 // S101 / LL-601	5	82	39	5586	59.3	68.8	7
002	M103 / M102 / LL-601	5	75	38	5433	37.8	65.3	7
018	583 // Bengal / LL-601	4	79	35	5286	52.5	67.3	7
021	LL6	5	111	36	5232	55.2	64.3	6
009	583 // Sesia / LL-601	4	78	39	5178	56.1	68.0	7
013	M202 / Bengal // LL-601	4	76	38	5043	49.8	69.7	7
001	M202 / LL-601 // Valencia	3	78	35	4938	44.8	69.5	8
011	247 // M202 / LL-601	4	78	34	4828	39.9	67.6	7
008	M401//78:18347/LL-401	4	78	35	4403	49.4	68.9	6
012	247 // M202 / LL-601 (NICE)	5	76	36	4312	33.7	64.6	7
010	247 // M202 / LL-601	4	79	34	4223	38.7	65.2	7
007	583 // Arborio Precoce / LL-401	3	76	39	4165	22.6	58.4	8
006	Gulfmont / AC 99-2006	5	73	35	4019	27.7	63.5	8
004	M205 // M202 / LL-601	4	76	37	3584	26.3	65.9	8
005	247 // M202 / LL-601	5	78	35	3384	24.4	65.8	8
017	M205 // M202 / LL-601	5	76	35	3298	34.0	64.4	8
014	247 // M202 / LL-601	4	78	33	3211	19.9	59.9	7
016	M202 / Bengal // LL-601 (SOUTH)	4	80	31	2726	15.2	52.0	8
c.v. %		13.5	2.0	6.3	12.7	15.2	3.4	9.8
$LSD_{0.05}$		0.9	2.5	3.7	1025	13.5	4.7	1.1

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

† Rotten neck blast rating 0-9, where 0 = no disease, 9 = maximum disease possible.

Table 12. Agronomic and milling performance of Liberty linked lines, EXP 100, Date 1, Rice Research Station, Crowley, LA, 2005.

Entry	Source	Vigor*	Days to 50% Heading	Plant Height (inch)	Lodging (%)	Yield (lb/A @ 12%)	Milling (%) Whole	Milling (%) Total
023	Co14	5	84	42		9949	66.3	71.8
024	Co10	5	83	42		9890	66.8	72.4
022	Coco/2/Cyp/Pris//295-60	5	84	40		9704	61.0	71.7
013	Madison / Tacauri // LL-601	5	79	43		9587	68.5	74.2
012	Lagrue//L204*2/LL-601	5	82	41		9480	62.3	69.9
018	L205 / Lagrue // 300-14 (DD)	4	81	43		9418	59.5	71.4
007	Lagrue//L204*2/LL-601	5	83	39		9236	59.0	70.3
017	Saber/2/Lemont/Litton//295-5	5	81	41		9194	60.9	71.0
021	Coco/2/Rexmont/Suprema1/295-86	5	82	40		9043	61.8	71.1
009	Lagrue//L204*2/LL-601	5	82	40		9039	61.2	71.8
014	Saber/2/Coco/Taim//295-19	5	82	41		9012	61.7	70.5
015	Coco/2/Cyp/Pris//295-60	5	81	40		8864	60.4	72.3
011	Saber/2/NB/Cyp//295-66	5	82	41		8684	59.7	70.8
020	Coco/2/Cyp/KB4/300-4	6	81	35		8681	55.9	73.1
019	Drew/2/Newrex/Tadukan//295-84	5	80	40		8588	62.3	70.9
001	Saber/2/Lemont/Litton//295-5	5	82	41	10	8502	63.9	72.5
008	Lagrue//Madison//LL-401	5	83	41		8437	60.3	71.0
016	Coco/2/L202/Coco//295-14	5	82	39		8431	67.6	72.8
010	Coco/2/L204*2/LL-601	5	83	43		8157	64.6	71.2
002	Saber/2/Lemont/Litton//295-5	5	81	39		8080	62.5	70.1
004	Suprema 1 / Taim // 299-2	5	78	41		8077	60.9	70.7
003	Saber/2/Madison/87-Y-550//29	4	80	42		7760	60.8	71.5
005	Madison / Jefferson // LL-601	4	77	43		7657	63.4	71.1
006	Lagrue//L204*2/LL-601	5	83	42		7460	61.1	70.6
c.v.%		7.6	1.0	3.9		10.6	2.8	1.4
$LSD_{0.05}$		0.6	1.3	2.6		1534	3.6	2.1

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

Table 13. Agronomic and milling performance of Liberty linked lines, EXP 100, Date 2, Rice Research Station, Crowley, LA, 2005.

Entry	Source	Vigor*	Days to 50% Heading	Plant Height (inch)	Yield (lb/A @ 12%)	Milling (%) Whole	Milling (%) Total	Blast†
018	L205 / Lagrue // 300-14 (DD)	4	84	41	6981	55.5	66.7	5
011	Saber/2/NB/Cyp//295-66	5	89	40	6859	51.3	65.5	3
024	Co10	5	85	37	6771	59.3	68.6	6
003	Saber/2/Madison/87-Y-550//29	4	85	39	6733	60.1	69.5	5
015	Coco/2/Cyp/Pris//295-60	5	84	37	6512	52.5	68.6	5
019	Drew/2/Newrex/Tadukan//295-84	5	85	36	6409	53.5	66.7	5
008	Lagrue//Madison//LL-401	4	85	38	6327	51.0	66.6	5
014	Saber/2/Coco/Taim//295-19	5	86	39	6278	51.1	63.1	4
013	Madison / Tacauri // LL-601	5	84	37	6256	58.3	68.5	6
016	Coco/2/L202/Coco//295-14	5	83	37	6182	52.6	65.9	5
005	Madison / Jefferson // LL-601	4	85	39	6153	55.4	68.1	5
012	Lagrue//L204*2/LL-601	5	87	37	6080	46.8	62.1	5
023	Co14	5	86	41	6070	55.8	66.5	5
001	Saber/2/Lemont/Litton//295-5	5	87	37	6013	48.8	65.1	5
004	Suprema 1 / Taim // 299-2	5	81	37	5964	48.8	66.4	6
020	Coco/2/Cyp/KB4/300-4	5	83	33	5954	55.0	70.3	5
021	Coco/2/Rexmont/Suprema1/295-86	5	85	35	5861	49.5	64.4	6
009	Lagrue//L204*2/LL-601	5	87	37	5749	46.6	62.6	4
002	Saber/2/Lemont/Litton//295-5	5	87	36	5650	46.5	64.0	5
010	Coco/2/L204*2/LL-601	5	86	36	5564	54.1	68.0	5
017	Saber/2/Lemont/Litton//295-5	5	85	37	5379	47.4	63.6	4
007	Lagrue//L204*2/LL-601	6	86	35	5110	47.9	62.6	4
006	Lagrue//L204*2/LL-601	6	88	37	4940	53.8	65.4	4
022	Coco/2/Cyp/Pris//295-60	6	88	37	4875	53.5	66.7	3
c.v. %		13.8	1.3	5.0	18.5	7.0	3.1	16.3
$LSD_{0.05}$		1.1	1.9	3.0	1826	7.5	4.2	1.3

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

† Rotten neck blast rating 0-9, where 0 = no disease, 9 = maximum disease possible.

Table 14. Agronomic and milling performance of Liberty linked lines, EXP 200, Date 1, Rice Research Station, Crowley, LA, 2005.

Entry	Source	Vigor*	Days to 50% Heading	Plant Height (inch)	Lodging (%)	Yield (lb/A @ 12%)	Milling (%) Whole	Milling (%) Total
024	Co10	5	83	43		9559	64.8	71.3
006	Coco/2/Cyp/Pris//295-60	5	83	41		9420	60.7	70.1
003	Wells/2/Dixiebelle/L202//295-	5	81	40		9313	67.2	73.3
007	Lagrue/2/Drew/Pris//299-2	5	83	42		9266	59.6	71.1
009	Coco/2/Cyp/Pris//295-60	5	82	41		9247	59.1	72.0
020	Coco/2/Pris/L202//298-4	5	85	41		9177	59.8	70.9
023	Co14	5	83	43		9174	64.1	70.9
001	Wells/2/Dixiebelle/L202//295-	5	84	41		8993	59.9	71.7
021	L205 / Lagrue // 300-14	5	82	38		8951	59.9	72.8
013	Wells/2/Adair10/Irga 414//299	5	84	40		8924	60.0	69.8
017	Drew/2/Pris/Lagrue//295-14	5	84	45		8869	56.9	70.6
008	Lagrue/2/Tacauri/Coco//299	5	80	39		8834	64.4	72.1
012	Lagrue/2/Drew/Pris//299-2	5	83	43		8818	58.7	70.4
011	Coco/2/Tac/Coco//299-3	5	82	41		8800	67.1	72.0
002	Wells/2/L144/Mad//295-74	5	85	40		8650	60.6	70.6
016	Coco/2/Pris/L202//298-4	5	83	44		8639	61.0	71.9
022	Wells/2/Adair10/Irga 414//299-8	5	83	38		8533	59.2	70.7
014	Cocodrie / Teqing // LL-601 (SA	5	84	46		8497	64.2	70.7
018	Coco/2/Cyp/Pris//295-60	5	84	39		8464	63.1	69.6
010	Coco/2/Cyp/KB4/300-4	6	81	36		8370	62.6	71.9
004	Wells//Jeff*2/LL-401	5	82	43		7553	65.9	71.8
005	Coco/LL-401	5	82	43		7534	59.9	69.5
015	Drew// Madison/LL-401	5	81	43	70	7383	56.7	67.3
019	Wells/2/Cyp/Alan//295-6	6	80	39		6675	58.9	69.6
c.v.%		7.9	0.9	4.1		10.6	6.1	2.1
$LSD_{0.05}$		0.7	1.2	2.8		1502	7.7	3.1

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

Table 15. Agronomic and milling performance of Liberty linked lines, EXP 200, Date 2, Rice Research Station, Crowley, LA, 2005.

Entry	Source	Vigor*	Days to 50% Heading	Plant Height (inch)	Yield (lb/A @ 12%)	Milling (%) Whole	Milling (%) Total	Blast†
017	Drew/2/Pris/Lagrue//295-14	5	85	41	8199	61.4	70.5	5
015	Drew// Madison/LL-401	5	83	42	8193	56.9	67.6	5
011	Coco/2/Tac/Coco//299-3	5	84	39	8191	67.9	72.0	4
005	Coco/LL-401	4	83	43	7956	57.3	68.1	6
009	Coco/2/Cyp/Pris//295-60	5	88	35	7475	58.6	68.3	3
007	Lagrue/2/Drew/Pris//299-2	4	87	38	7326	59.0	68.8	5
006	Coco/2/Cyp/Pris//295-60	5	87	35	7155	62.5	67.6	4
016	Coco/2/Pris/L202//298-4	5	88	38	7105	56.4	68.3	5
002	Wells/2/L144/Mad//295-74	5	88	35	7020	57.2	70.3	4
018	Coco/2/Cyp/Pris//295-60	5	87	37	6929	58.0	65.5	4
024	Co10	6	85	40	6862	62.9	70.3	3
008	Lagrue/2/Tacauri/Coco//299	5	84	36	6840	56.7	66.0	5
003	Wells/2/Dixiebelle/L202//295-	4	85	31	6783	62.6	71.5	5
001	Wells/2/Dixiebelle/L202//295-	4	88	38	6774	56.5	68.4	4
004	Wells//Jeff*2/LL-401	5	86	37	6749	62.8	71.5	5
014	Cocodrie / Teqing // LL-601 (SA	5	89	43	6290	59.2	69.0	4
020	Coco/2/Pris/L202//298-4	5	88	38	6213	56.9	67.7	4
013	Wells/2/Adair10/Irga 414//299	5	88	36	6181	55.0	64.9	4
012	Lagrue/2/Drew/Pris//299-2	5	87	38	6057	55.7	67.4	4
021	L205 / Lagrue // 300-14	5	87	34	6040	56.3	69.1	4
019	Wells/2/Cyp/Alan//295-6	5	83	35	5612	51.8	65.6	4
023	Co14	6	87	39	5568	56.7	66.2	4
010	Coco/2/Cyp/KB4/300-4	5	86	30	5337	59.5	69.4	4
022	Wells/2/Adair10/Irga 414//299-8	5	89	33	4942	53.2	68.1	4
c.v. %		9.8	1.3	4.6	9.8	6.1	2.1	20.5
$LSD_{0.05}$		0.8	1.9	2.8	1087	7.4	3.0	1.4

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

† Rotten neck blast rating 0-9, where 0 = no disease, 9 = maximum disease possible.

Table 16. Agronomic and milling performance of Liberty linked lines, EXP 300, Date 1, Rice Research Station, Crowley, LA, 2005.

Entry	Source	Vigor*	Days to 50% Heading	Plant Height (inch)	Lodging (%)	Yield (lb/A @ 12%)	Milling (%) Whole	Milling (%) Total
023	Co14	5	83	44		10043	65.1	71.7
024	Co10	5	83	42		10040	66.6	73.0
010	Teqing / L205 // 300-14	5	82	41		9613	62.7	72.5
020	Tacauri / Wells // 299-2 (TALL)	5	81	48		9567	62.5	69.4
009	Teqing / L205 // 300-14	5	82	40		9456	59.6	70.2
017	Wells/2/Tacauri/Adair//300-13	5	83	48		9433	62.6	70.8
006	Lagrue//Jeff*2/LL-401	5	82	39		9410	62.7	71.2
008	Teqing / L205 // 300-14	5	82	40		9274	61.3	71.2
002	Coco/2/Pris/L203//295-22	5	83	42		9180	65.6	71.9
019	Wells/2/Tacauri/Newrex//295-2	5	82	44		8972	62.2	72.5
011	Saber/2/NB/Cyp//295-66	5	82	42		8962	57.9	72.1
022	Diamante / Priscilla // 300-14	5	80	33		8913	59.6	71.4
007	Lagrue/2/Drew/Pris//299-2	5	82	42		8767	61.3	72.9
014	Coco/2/Rexmont/Suprema1/295-86	5	84	40		8704	62.2	72.2
021	L204 / Wells // 299-2	5	82	40		8326	62.7	70.7
005	Drew/2/Taim/87-Y-550//299-13	6	81	41		8261	53.2	73.7
003	Coco/2/NB/Cyp//295-66	5	83	41		8146	62.3	69.2
012	Coco/2/L202/Katy//295-18	5	83	42		8097	58.0	69.8
004	Coco/2/Coco/L144/295-7	5	83	42		7980	66.3	72.6
018	Wells/2/Adair/L203//295-37 (T	5	84	42		7979	65.0	73.0
013	Coco/2/Tac/Coco//299-3	5	82	40		7913	65.0	70.9
001	Wells/2/Litton/L202//299-10	5	83	40		7698	56.6	71.3
016	Saber/2/Pris/L204//295-27	4	78	41		7578	64.5	70.4
015	Diamante//Drew*2/LL-601	5	81	45	53	5617	63.3	69.5
c.v.%		8.2	0.9	2.8		6.8	4.4	1.5
$LSD_{0.05}$		0.7	1.2	1.9		969	5.7	2.3

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

Table 17. Agronomic and milling performance of Liberty linked lines, EXP 300, Date 2, Rice Research Station, Crowley, LA, 2005.

Entry	Source	Vigor*	Days to 50% Heading	Plant Height (inch)	Yield (lb/A @ 12%)	Milling (%) Whole	Milling (%) Total	Blast†
017	Wells/2/Tacauri/Adair//300-13	5	89	44	8321	62.5	70.5	3
002	Coco/2/Pris/L203//295-22	4	85	39	7625	64.0	69.6	5
020	Tacauri / Wells // 299-2 (TALL)	4	87	48	7569	55.2	67.8	5
003	Coco/2/NB/Cyp//295-66	5	87	40	7214	62.2	70.1	5
007	Lagrue/2/Drew/Pris//299-2	5	89	38	7048	57.9	69.6	3
004	Coco/2/Coco/L144/295-7	4	87	40	7029	62.9	70.9	4
012	Coco/2/L202/Katy//295-18	4	88	39	6947	54.9	66.9	5
008	Teqing / L205 // 300-14	5	88	38	6935	57.7	67.3	3
016	Saber/2/Pris/L204//295-27	4	84	38	6927	60.2	69.0	5
006	Lagrue//Jeff*2/LL-401	5	87	38	6864	57.7	67.4	5
019	Wells/2/Tacauri/Newrex//295-2	4	88	39	6737	55.6	67.8	4
018	Wells/2/Adair/L203//295-37 (T	4	88	42	6651	59.1	70.4	5
023	Co14	6	87	41	6630	60.8	68.8	4
010	Teqing / L205 // 300-14	5	88	38	6628	56.2	68.1	3
014	Coco/2/Rexmont/Suprema1/295-86	5	85	38	6626	59.1	71.1	4
013	Coco/2/Tac/Coco//299-3	5	87	38	6586	65.9	71.3	4
024	Co10	6	86	40	6507	63.1	70.6	4
009	Teqing / L205 // 300-14	5	89	37	6452	58.4	68.6	3
011	Saber/2/NB/Cyp//295-66	5	90	37	6356	58.0	68.4	4
001	Wells/2/Litton/L202//299-10	4	88	39	6219	58.2	69.8	5
005	Drew/2/Taim/87-Y-550//299-13	5	88	38	6118	55.1	71.6	6
015	Diamante//Drew*2/LL-601	4	88	39	5912	63.1	68.3	6
022	Diamante / Priscilla // 300-14	5	88	30	4546	53.9	67.2	4
021	L204 / Wells // 299-2	5	90	36	4171	58.3	67.3	2
c.v. %		10.7	1.5	5.1	15.7	5.3	2.2	13.7
$LSD_{0.05}$		0.8	2.2	3.2	1703	6.5	3.1	0.9

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

† Rotten neck blast rating 0-9, where 0 = no disease, 9 = maximum disease possible.

Table 18. Agronomic and milling performance of Liberty linked lines, EXP 400, Date 1, Rice Research Station, Crowley, LA, 2005.

Entry	Source	Vigor*	Days to 50% Heading	Plant Height (inch)	Lodging (%)	Yield (lb/A @ 12%)	Milling (%) Whole	Milling (%) Total
023	Co14	6	83	43		9269	65.4	72.2
007	Lagrue/2/Tacauri/Coco//299	5	82	40		9197	59.8	73.0
002	Saber//Pris*2/LL-601	5	82	42		9145	61.7	71.7
003	Lagrue/2/Drew/Pris//299-2	5	82	38		9026	61.7	72.1
005	Lagrue/2/Drew/Pris//299-2	4	82	39		8970	60.5	72.3
004	Saber//Pris*2/LL-601	5	83	38		8845	55.6	72.0
009	Wells/2/Millie/Cyp//295-9	5	86	39		8731	57.0	72.3
024	Co10	5	82	41		8667	63.5	70.3
012	Wells/2/V7817/KB//298-7	5	84	41		8480	54.5	69.5
016	Diamante/2/Taim/87-Y-550//299-13	5	83	41		8379	54.6	72.5
006	Lagrue/2/NB/Cyp//295-66	5	82	41		8287	60.2	71.4
010	Madison/Lagrue//299-2	5	83	36		8279	58.2	71.7
001	Jefferson / Drew // LL-	5	80	44		8186	63.1	73.7
019	Coco/2/Rexmont/Suprema1	5	85	40		8123	58.0	69.5
020	Saber/2/Pris/L202//298-4	5	86	41		8073	55.9	70.9
017	Wells//Madison/LL-401 (DD)	5	84	33		7978	56.2	73.6
008	Wells/2/Rosemont/Millie//295-	4	86	39		7808	56.2	69.4
011	Drew/2/Coco/Pris//295-70	5	83	48	37	7686	56.7	70.0
015	Diamante/2/Lagrue/Cyp//295	5	84	40		7461	55.1	69.6
018	L202/Wells//300-14	6	84	40		7277	59.1	69.5
022	Madison/Lagrue//299-2	5	87	38		7258	59.3	69.0
021	Madison / Jefferson // LL-601	6	84	32		7175	62.0	72.4
013	Drew/2/Drew*2/LL-601	5	85	44		7167	58.1	72.4
014	Diamante/2/Lagrue/Cyp//295	5	84	41		6805	52.9	67.7
c.v.%		6.1	1.2	3.3		6.1	5.4	2.2
$LSD_{0.05}$		0.5	1.7	2.2		818	6.6	3.2

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

Table 19. Agronomic and milling performance of Liberty linked lines, EXP 400, Date 2, Rice Research Station, Crowley, LA, 2005.

Entry	Source	Vigor*	Days to 50% Heading	Plant Height (inch)	Yield (lb/A @ 12%)	Milling (%) Whole	Milling (%) Total	Blast†
011	Drew/2/Coco/Pris//295-70	4	87	48	8378	61.4	70.4	3
024	Co10	5	85	43	8067	61.5	69.6	5
012	Wells/2/V7817/KB//298-7	4	89	41	7981	54.2	69.2	4
004	Saber//Pris*2/LL-601	5	87	37	7806	58.3	68.8	4
005	Lagrue/2/Drew/Pris//299-2	5	87	39	7735	59.2	70.4	4
023	Co14	5	87	42	7705	62.6	69.4	4
009	Wells/2/Millie/Cyp//295-9	5	90	39	7637	62.6	71.3	4
020	Saber/2/Pris/L202//298-4	5	88	40	7617	60.0	68.8	4
019	Coco/2/Rexmont/Suprema1	5	87	40	7588	58.8	67.9	5
002	Saber//Pris*2/LL-601	5	85	39	7549	56.5	68.2	5
016	Diamante/2/Taim/87-Y-550//299-13	4	87	38	7538	56.6	68.6	4
007	Lagrue/2/Tacauri/Coco//299	5	87	38	7438	61.4	70.3	4
001	Jefferson / Drew // LL-	4	84	39	7264	63.0	72.1	5
006	Lagrue/2/NB/Cyp//295-66	5	86	38	7031	58.2	69.5	5
015	Diamante/2/Lagrue/Cyp//295	5	87	38	6975	55.7	65.5	5
014	Diamante/2/Lagrue/Cyp//295	5	87	39	6874	57.3	66.0	4
017	Wells//Madison/LL-401 (DD)	5	88	34	6652	58.1	69.8	4
003	Lagrue/2/Drew/Pris//299-2	5	87	35	6641	60.5	69.3	4
022	Madison/Lagrue//299-2	5	92	39	6142	53.7	65.1	3
008	Wells/2/Rosemont/Millie//295-	4	91	39	6128	44.6	61.1	5
018	L202/Wells//300-14	5	88	40	6055	57.8	67.5	4
013	Drew/2/Drew*2/LL-601	5	91	42	5866	53.4	67.7	3
010	Madison/Lagrue//299-2	5	89	35	5824	57.9	68.7	3
021	Madison / Jefferson // LL-601	6	88	33	3572	62.8	71.9	3
c.v. %		8.9	1.0	5.6	9.3	5.4	2.0	17.1
$LSD_{0.05}$		0.7	1.4	3.6	1072	6.5	2.8	1.1

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.
†Sheath blight rating 0-9, where 0 = no disease, 9 = maximum disease possible.

Table 20. Agronomic and milling performance of Liberty linked lines, HRTR, Date 1, Rice Research Station, Crowley, LA, 2005.

Entry	Source	Vigor*	Days to 50% Heading	Plant Height (inch)	Lodging (%)	Yield (lb/A @ 12%)	Milling (%) Whole	Milling (%) Total
005	CO 14	5	84	43		10353	63.9	70.6
007	CO 14	5	84	43		10275	62.2	70.1
003	CO 14	5	84	43		10052	61.8	70.1
002	CO 14	5	84	43		10045	63.4	70.5
004	CO 14	5	84	43		10018	64.4	71.2
001	COCODRIE	5	83	41		9667	62.6	70.4
006	CO 14	5	85	42		9336	63.1	70.3
010	02-AMS-19-7	6	86	42		8154	62.1	69.9
008	02-AMS-19-7	6	88	42		7803	62.2	70.0
012	02-AMS-19-7	5	87	42		7799	61.1	69.7
011	02-AMS-19-7	7	87	41		7466	61.8	70.2
009	02-AMS-19-7	6	87	42		7339	60.9	68.7
c.v.%		6.5	1.2	2.8		5.4	1.3	0.9
$LSD_{0.05}$		0.6	1.7	2.0		818	1.3	1.0

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

Table 21. Agronomic and milling performance of Liberty linked lines, HRTR, Date 2, Rice Research Station, Crowley, LA, 2005.

Entry	Source	Vigor*	Days to 50% Heading	Plant Height (inch)	Yield (lb/A @ 12%)	Milling (%) Whole	Milling (%) Total	Blast†
001	COCODRIE	5	84	42	8596	63.3	70.0	4
004	CO 14	5	87	44	8558	63.2	69.2	4
007	CO 14	5	87	43	8558	61.1	68.5	4
005	CO 14	6	87	43	8131	62.0	68.4	4
003	CO 14	5	87	44	8061	61.2	68.4	4
002	CO 14	6	88	43	7936	59.3	68.1	4
006	CO 14	6	87	45	7698	62.9	69.0	4
008	02-AMS-19-7	7	86	41	7235	66.2	71.4	4
010	02-AMS-19-7	6	87	41	6938	60.6	69.0	5
012	02-AMS-19-7	5	87	41	6819	63.3	70.1	4
009	02-AMS-19-7	6	88	41	6517	61.2	69.9	4
011	02-AMS-19-7	7	87	42	5706	66.0	72.2	4
c.v. %		8.2	1.2	3.6	8.7	3.4	1.5	8.5
$LSD_{0.05}$		0.8	1.7	2.5	1033	4.6	2.3	0.6

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.
†Sheath blight rating 0-9, where 0 = no disease, 9 = maximum disease possible.

Table 22. Agronomic and milling performance of Liberty linked lines, Puerto Rico entries, Rice Research Station, Crowley, LA, 2005.

Entry	Source	Vigor*	Days to 50% Heading	Plant Height (inch)	Lodging (%)	Yield (lb/A @ 12%)	Milling (%)	
							Whole	Total
004	CPRS//82CAY21/TBNT/3/LYC003	6	71	33		7301	69.2	72.3
003	CPRS//82CAY21/TBNT/3/LYC003	6	69	33		7268	70.1	73.2
018	CO 10	4	72	32		7110	62.9	70.7
001	CPRS//82CAY21/TBNT/3/LYC003	4	71	39		7026	69.3	74.1
002	CPRS//82CAY21/TBNT/3/LYC003	4	66	32		6921	64.1	74.0
019	CO 14	5	72	34		6915	66.8	71.7
007	CHENIERE/LYC007	4	72	36		6689	69.3	73.9
013	CHENIERE/LYC001	6	74	37		6574	66.6	72.5
005	NWBT/KATY//9902207x2/3/LYC008	6	70	33		6485	68.2	72.7
009	CHENIERE/LYC007	5	74	35		6407	68.0	71.7
006	CHENIERE/LYC001	5	68	32		6276	68.9	74.6
016	KATY/CPRS//NWBT/…/3/9502008/4/LYC007	3	72	37		6012	64.0	71.7
017	LL 001	3	74	31		5961	68.4	73.4
011	CHENIERE/LYC001	6	68	35		5890	69.0	73.4
010	CHENIERE/LYC007	6	69	36		5729	69.5	73.9
008	CHENIERE/LYC007	4	69	34		5717	69.0	73.3
014	CHENIERE/LYC001	6	66	37		5451	65.5	73.1
015	CHENIERE/LYC001	6	68	31		5093	68.9	73.7
012	CHENIERE/LYC001	6	73	35		5023	66.2	72.6
020	LL7	6	69	25		4682	59.0	69.1

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

DATE OF PLANTING STUDIES

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These studies are conducted to evaluate the effects of planting date on the yield, milling quality, and agronomic performance of major rice varieties and experimental lines. Information generated from these studies is important in evaluating the stability of rice lines under the various environmental conditions posed by different times of planting.

Experiment: Date of Planting

Location: Rice Research Station

Seeding Rate: 150 lb/A

Planting Method: Water-seeded

Fertilization: All planting dates: 16-48-48 lb/A (N-P_2O_5-K_2O) preplant incorporated; 148 lb/A pre permanent flood

Plot Size: 4.66 x 12 ft

Water Management: All tests were water-seeded. Flood was removed then re-established as in a pinpoint flood system to evaluate seedling vigor. At the 2-leaf stage, the flood was removed and fields allowed to dry. Herbicides and fertilizer were applied on a dry soil surface and the flood was re-established at the 4-leaf stage. Tests were drained approximately 2 weeks prior to harvest.

Herbicides: Arrosolo (Propanil + molinate) 1 gal/A, Permit 2/3 oz/A, and Londax 1 oz/A

Insecticides: Karate 2 oz/A

Planting Date: Feb 28 (lost to blackbirds), Mar 16, Apr 1, Apr 15, May 2, May 16, June 1, and July 1

Rice Lines: Cocodrie, Cypress, CL161, CL131, Cheniere, Trenasse, Pirogue, Cybonnet, CLXL8, CLXP730, XP723, Bengal, Jupiter, 05URN011, and 05URN045.

Experimental Design: Randomized complete block with three replications.

Results: Tables 1 to 5.

Table 1. Grain yields of 15 rice lines planted over seven planting dates, 2005, Crowley, LA.

Entry	Planting Date							Mean
	March 16	April 1	April 15	May 2	May 16	June 1	July 1	
CL161	4469	7773	8083	7123	5453	2779	3073	5536
CL131	5393	7532	7428	6035	5652	3966	3061	5581
TRENASSE	4547	7656	5534	6122	5595	3656	3526	5234
COCODRIE	4394	7426	8077	5499	5927	3506	2883	5388
CHENIERE	4612	7148	6824	5846	5300	4225	2766	5246
CYPRESS	3771	7590	7545	6248	5973	3777	3110	5431
PIROGUE	3302	6387	7642	5023	3740	3277	2700	4582
BENGAL	3078	7337	7700	6053	4927	3450	2236	4969
JUPITER	3085	8307	9134	7184	6049	5986	3073	6117
05URN 011	4393	8286	7698	6198	5917	3539	3214	5606
05URN 045	3960	7960	8167	6259	6243	4758	2648	5713
CYBONNET	3100	7328	8095	5204	6232	4837	3203	5428
CLXL 8	6303	8194	9582	9022	6785	5360	3986	7033
CLXP 730	6826	8539	9306	9179	7007	3874	4537	7038
XP 723	6426	8785	10223	9962	8763	3620	4525	7472
Means	4511	7750	8069	6730	5971	4041	3236	5758
C.V. %	16.7	5.4	12.1	11.5	9.8	22.4	11.4	
$LSD_{0.05}$	1263	694	1545	1291	934	1554	618	

Table 2. Seedling vigor of 15 rice lines planted over seven planting dates, 2005, Crowley, LA.

Entry	Planting Date							Mean
	March 16	April 1	April 15	May 2	May 16	June 1	July 1	
CL161	5	4	6	6	5	5	6	5
CL131	4	4	6	5	4	4	4	4
TRENASSE	6	4	6	7	5	4	5	5
COCODRIE	5	4	6	7	5	5	5	5
CHENIERE	5	4	6	7	4	5	5	5
CYPRESS	5	4	6	5	4	5	5	5
PIROGUE	6	5	5	8	6	6	6	6
BENGAL	6	4	6	6	5	5	5	5
JUPITER	5	4	5	7	5	4	6	5
05URN 011	5	4	5	7	4	6	5	5
05URN 045	6	4	5	6	5	5	5	5
CYBONNET	6	4	5	7	4	5	6	5
CLXL 8	6	4	5	6	6	6	5	5
CLXP 730	6	5	6	7	6	6	6	6
XP 723	5	4	5	6	6	6	6	5
Means	5	4	6	6	5	5	5	5
C.V. %	14.2	11.9	13.3	16.0	13.2	10.7	9.7	
$LSD_{0.05}$	1.3	0.8	1.2	1.7	1.1	0.9	0.9	

Table 3. Days to 50% heading of 15 rice lines planted over seven planting dates, 2005, Crowley, LA.

Entry	Planting Date							Mean
	March 16	April 1	April 15	May 2	May 16	June 1	July 1	
CL161	101	89	96	94	87	94	72	91
CL131	96	86	91	91	82	87	67	86
TRENASSE	87	80	87	84	74	80	62	79
COCODRIE	95	85	92	91	82	86	69	86
CHENIERE	95	88	95	92	85	91	72	88
CYPRESS	96	88	96	94	86	92	73	89
PIROGUE	96	87	84	89	76	82	67	83
BENGAL	101	88	87	91	81	89	71	87
JUPITER	104	88	91	92	84	88	73	88
05URN 011	97	85	86	88	79	82	72	84
05URN 045	93	85	88	90	83	85	70	85
CYBONNET	95	88	93	93	82	88	69	87
CLXL 8	97	85	91	93	84	91	69	87
CLXP 730	94	85	91	94	83	87	69	86
XP 723	92	84	87	88	81	87	69	84
Means	96	86	90	91	82	87	70	86
C.V. %	2.1	1.0	2.2	1.5	2.0	2.5	2.5	
$LSD_{0.05}$	3.3	1.5	3.3	2.2	2.8	3.7	3.0	

Table 4. Plant heights (inch) of 15 rice lines planted over seven planting dates, 2005, Crowley, LA.

Entry	Planting Date							Mean
	March 16	April 1	April 15	May 2	May 16	June 1	July 1	
CL161	33	37	41	41	37	34	31	36
CL131	29	31	34	33	32	30	29	31
TRENASSE	33	33	35	37	34	31	33	34
COCODRIE	32	35	38	35	34	30	31	34
CHENIERE	33	34	37	36	36	32	32	34
CYPRESS	33	33	39	37	34	32	31	34
PIROGUE	31	33	35	33	33	31	32	33
BENGAL	31	33	37	33	32	32	30	33
JUPITER	21	34	35	34	34	32	31	32
05URN 011	34	36	37	38	37	31	36	36
05URN 045	33	35	38	36	36	32	32	35
CYBONNET	30	35	39	36	35	32	33	34
CLXL 8	37	41	43	43	43	39	37	40
CLXP 730	39	42	44	45	41	42	37	42
XP 723	36	40	44	43	43	39	37	40
Means	32	35	38	37	36	33	33	35
C.V. %	13.8	4.4	4.2	3.2	5.5	4.7	3.9	
$LSD_{0.05}$	7.5	2.6	2.7	2.0	3.3	2.6	2.1	

Table 5. Milling yields (whole-total) of 15 rice lines planted over seven planting dates, 2005, Crowley, LA.

Entry	Planting Date							Mean
	March 16	April 1	April 15	May 2	May 16	June 1	July 1	
CL161	63.7-70.5	63.0-70.0	66.7-72.0	60.7-67.3	64.4-69.3	58.1-68.5	66.4-71.8	63.3-69.9
CL131	63.5-69.7	62.9-71.2	65.4-72.9	57.7-66.7	61.8-68.8	62.0-70.0	61.7-70.9	62.1-70.0
TRENASSE	66.0-70.8	62.5-69.2	64.7-72.4	58.0-67.8	58.9-68.9	67.1-72.2	57.6-69.1	62.1-70.0
COCODRIE	62.3-70.1	62.5-72.7	67.2-72.5	60.7-68.6	64.5-72.0	64.5-71.4	64.9-73.5	63.8-71.5
CHENIERE	63.4-71.5	64.4-72.5	67.5-72.8	57.4-66.9	60.4-68.0	59.6-69.1	68.8-72.4	63.1-70.4
CYPRESS	63.8-70.2	63.8-70.1	66.5-71.7	60.1-67.4	65.4-70.7	62.3-69.6	68.1-71.7	64.3-70.2
PIROGUE	64.3-72.3	61.5-68.6	63.0-72.6	62.6-71.4	66.3-70.4	64.7-72.4	60.5-70.7	63.3-71.2
BENGAL	64.3-72.4	66.0-71.0	66.5-72.8	65.9-71.5	50.3-71.4	67.4-71.9	65.5-71.2	63.7-71.7
JUPITER	67.2-70.3	66.7-68.6	66.3-72.0	65.5-69.5	52.6-69.5	65.9-70.9	64.8-70.0	64.1-70.1
05URN 011	65.2-68.8	65.0-70.7	68.8-72.4	63.9-69.4	67.3-72.5	67.2-70.3	48.2-69.5	63.6-70.5
05URN 045	63.8-71.4	62.6-71.7	65.1-74.6	61.6-71.5	62.3-72.8	59.6-72.3	62.9-72.9	62.5-72.4
CYBONNET	62.9-71.5	63.8-72.6	67.1-72.1	59.3-67.8	66.6-71.4	62.7-71.6	64.2-74.6	63.8-71.6
CLXL 8	47.4-65.8	55.9-69.4	64.1-73.4	54.6-67.9	57.4-69.9	38.9-67.1	55.0-70.9	53.3-69.2
CLXP 730	61.9-70.1	62.6-72.1	66.3-73.7	59.9-69.8	47.4-70.1	48.2-69.3	61.9-71.0	58.3-70.9
XP 723	61.7-70.3	58.9-72.0	65.7-74.2	63.2-71.4	57.7-70.9	49.6-69.4	65.1-72.0	60.3-71.4
Means	62.7-70.4	62.8-70.8	66.0-72.8	60.7-69.0	60.2-70.4	59.8-70.4	62.3-71.5	62.1-71.4
C.V. %	6.7-2.5	2.7-2.2	3.7-1.3	3.5-1.5	7.5-1.4	8.0-2.0	4.3-1.1	
$LSD_{0.05}$	7.2-3.1	3.6-3.3	5.2-2.1	4.6-2.2	9.7-2.1	10.3-3.0	5.7-1.7	

MEDIUM-GRAIN AND SPECIALTY PURPOSE RICE BREEDING

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This state project is designed to develop superior medium-grain rice varieties with emphasis on the improvement in yield potential, quality (milling, cooking, and processing), disease resistance, lodging resistance, seedling vigor, and early maturity. The other objective is to develop specialty rice varieties adapted to Louisiana and southern U.S. environmental conditions with superior cooking, agronomic, milling, and specific qualities, such as aroma and elongation. The emphasis is being placed on breeding for Jasmine-, Basmati-, and Della-type long-grain rice. Due to station personnel changes, the medium-grain breeding activities of this project will be taken over by Dr. S.B. Blanche beginning 2006.

The 2005 field test included 129 transplanted F_1s (74 medium-grain and 55 specialty), 127 space planted F_2 populations (58 medium-grain and 69 specialty), and 17,143 progeny rows (10,326 medium-grain and 6,817 specialty), ranging from F_3 to F_8. Out of those rows, 128 specialty rows were harvested for the further evaluation. Medium-grain rows were harvested separately by Dr. Blanche. A total of 455 new crosses were made. Of these, long-grain, Clearfield, Liberty-linked, medium-grain, and specialty-purpose crosses accounted for 114, 128, 14, 71, and 128, respectively. Two hundred thirty-seven breeding lines (142 medium-grain and 95 specialty) were included in the preliminary yield test. Of those, 69 (46 medium-grain and 23 specialty) were in replicated test (PY) and 168 (96 medium-grain and 72 specialty) were in the single plot test (SP). Yield, milling, and agronomic performance of these lines are listed in tables 1 to 5. Eight advanced medium-grain lines were also tested in the Uniform Regional Rice Nursery (URN). Test results of these lines (entries 028, 031, 125, 131, 134, 137, 140, and 146) are presented in Table 6. Four specialty entries were tested in URN. Specific specialty traits, such as aroma, elongation, cooking flavor, and texture, were placed at the same priority as both grain and milling yield potentials. Among these lines, two were Jasmine types (entries 025 and 183), one was Basmati type (Entry 177), and one Della type (Entry 180). Agronomic results are presented in Table 7. Most of these lines were also tested in statewide multi-location Commercial-Advanced (CA) yield trials. CA data are presented in tables 8 and 9. The agronomic performance of these advanced lines as compared with other conventional lines can also be found in tables 1 to 15 on pages 5 to 24. An advanced specialty trial was carried out as a companion test of CA at Jefferson Davis Parish. The results are presented in Table 10.

Grain quality and specialty traits, such as dimension, size, translucency, and aroma, are extremely important to this project. Previous studies revealed that several such traits were highly inheritable and can be effectively selected in the mid- or even early generations. Such rigorous selection in the early and mid-generations enables us to efficiently use our limited resources by concentrating on the materials with target traits. Extensive lab work was carried out to evaluate grain quality and/or aroma of 2005 field selections of 1,235 specialty rows ranging from F_3 to F_5. About 50% of tested specialty progenies have been discarded because of the poor grain quality or lack of strong aroma. An additional 128 bulked specialty rows were also evaluated for seedling vigor, milling, grain quality, and aroma.

The Puerto Rico winter nursery is critical to this project. In 2005, 2,500 progeny rows of both medium-grain and special purpose types were planted and selected. Most of these were F_3s for the generation advancement purpose.

Three medium-grain experimental lines (LA2028, LA2125, and LA2137) and one Basmati type specialty line (LA2177) continuously showed superior yield potential, good milling and grain quality. Small increases of these lines will be planted for further evaluation and varietal release purpose.

Table 1. Agronomic and milling performance of 2005 preliminary yield test, Group 15, medium-grain entries. Rice Research Station, Crowley, LA.

Entry	Pedigree	Vigor*	Days to 50% Heading	Plant Height (in)	Grain Yield (lb/A @ 12%)			Milling Yield (%)		Blast†	SB‡
					Main	Ratoon	Total	Whole	Total		
856	9502065/BNGL	5	83	37	9246	2136	11382	66.3	70.1	7.0	5.0
874	JUPITER	4	82	39	9730	1636	11366	67.2	70.1	6.0	5.5
858	MERC//MERC/KOSH/3/MERC/RICO//BNGL	4	81	37	8697	2400	11098	65.5	71.1	6.0	5.0
873	MERC//MERC/KOSH/3/MERC/RICO//BNGL	4	80	37	8591	2035	10626	67.5	70.2	6.0	5.5
863	BNGL/3/ORIN//MERC/RICO//…	4	79	38	8911	1379	10290	65.5	68.4	6.0	5.5
871	MERC/RICO//BNGL/3/SMARS/MARS/…	5	83	34	8706	1484	10190	64.0	69.3	7.5	4.5
860	BNGL//MERC/RICO/3/RICO/…	5	83	39	8513	1532	10045	69.4	72.5	6.0	5.5
869	SMARS/MARS//…/3/MERC/RICO//BNGL	4	79	37	8449	1510	9959	65.1	69.3	6.5	5.0
875	BNGL	4	84	39	8383	1445	9827	67.8	71.6	6.0	5.5
870	SMARS/MARS//…/3/MERC/RICO//BNGL	6	80	37	8674	1142	9816	66.7	71.4	6.5	5.0
861	BNGL//MERC/RICO/3/EARL	5	79	38	6822	2967	9788	69.1	72.6	7.5	5.5
857	MERC//MERC/KOSH/3/MERC/RICO//BNGL	5	79	36	7511	2172	9683	68.8	72.1	6.0	5.5
855	MERC/RICO//BNGL/3/9502065	5	83	37	8473	1110	9582	69.9	72.4	5.0	5.5
864	BNGL/3/ORIN//MERC/RICO//…	6	78	38	8477	1100	9577	63.6	70.0	5.5	4.5
854	MERC/LMNT//MERC/3/BNGL/4/LFTE	6	80	35	7765	1608	9373	67.7	70.4	7.0	5.0
868	MERC//MERC/KOSH/3/MERC/RICO//BNGL	5	80	36	7709	1640	9349	64.0	70.1	7.0	5.5
872	BNGL/3/SMARS/MARS//…	5	82	38	7938	1349	9286	67.1	70.4	7.5	5.0
853	9502065/3/MERC/RICO//BNGL	5	82	35	7546	1653	9199	66.3	71.1	6.5	3.5
867	BNGL/3/MERC/RICO//MERC	5	77	37	7499	1490	8989	67.5	71.5	7.0	5.0
852	BNGL/9502065	5	81	33	7799	1077	8877	67.4	70.3	7.0	3.5
866	MERC/RICO//BNGL/3/SMARS/MARS/…	4	81	37	8131	611	8741	64.4	67.6	6.0	5.0
851	MERC/RICLBNGL/3/SMARS/MARS/…	4	83	34	7229	1361	8590	65.7	69.5	7.0	5.0
859	SMARS/MARS//…/3/MERC/RICO//BNGL	6	81	36	7723	819	8541	66.7	70.2	6.5	4.0
865	BNGL/3/ORIN//MERC/RICO//…	6	80	35	7291	846	8137	66.5	71.3	6.5	4.0
862	BNGL/4/9502065/3/MERC//MERC	5	82	40	7071	1018	8090	64.1	68.6	6.5	5.5
c.v.%		11.9	1.5	3.9	11.8	31.0	12.9	2.3	2.2		
$LSD_{0.05}$		1.2	2.5	2.9	1976	959	2561	3.1	3.2		

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

† Leaf blast rating 0-9, where 0 = no disease, 9 = maximum disease possible.

‡ SB = Sheath blight rating 0-9, where 0 = no disease, 9 = maximum disease possible.

Table 2. Agronomic and milling performance of 2005 preliminary yield test, Group 16, medium-grain entries. Rice Research Station, Crowley, LA.

Entry	Pedigree	Vigor*	Days to 50% Heading	Plant Height (in)	Grain Yield (lb/A @ 12%)			Milling Yield (%)		Blast†	SB‡
					Main	Ratoon	Total	Whole	Total		
896	ORIN//MERC/RICO//…/3/BNGL/RICO	5	79	41	10075	2193	12269	65.8	69.7	6.5	5.5
879	BNGL//MERC/RICO/3/MERC/RICO//BNGL	5	82	40	9346	2044	11389	66.5	71.1	5.0	5.5
897	ORIN/3/MERC/CAM9/MARS/4/BNGL	4	79	41	9129	1873	11002	66.7	70.2	7.0	5.0
885	BNGL//MERC/RICO/3/EARL	5	82	40	9507	1115	10622	69.0	71.4	6.5	6.0
894	EARL/9902028	5	82	36	9397	1079	10476	67.7	70.9	5.0	6.0
886	BNGL//MERC/RICO/3/EARL	5	83	37	9513	702	10215	69.7	72.8	6.5	6.0
877	BNGL//MERC/RICO/3/RICO/…	5	83	38	9570	644	10214	69.8	73.3	6.5	6.5
900	MEDARK	6	83	37	8735	1468	10203	67.2	71.4	5.5	6.0
899	EARL	4	82	44	9211	769	9981	64.1	67.9	5.0	4.0
883	BNGL//MERC/RICO/3/EARL	5	84	38	8675	1201	9876	70.4	72.7	7.0	6.0
880	PY 678/BNGL//MERC/RICO	6	85	40	8371	1483	9854	66.1	72.7	7.0	3.5
893	EARL/9902028	6	85	36	9265	514	9779	64.6	68.3	5.0	4.5
884	9502065/3/MERC//MERC/…	6	80	36	9262	482	9743	62.8	69.1	6.5	5.5
898	ORIN/3/MERC/CAM9/MARS/4/BNGL	6	83	38	8862	813	9675	66.7	69.5	5.0	4.5
882	SP 361/BNGL	5	78	38	8940	667	9607	64.9	69.0	6.0	4.5
891	9502065/3/MERC//MERC/4/BNGL	6	78	41	9109	377	9485	62.7	69.8	7.0	6.5
895	EARL/9902028	7	78	42	9011	324	9336	66.9	69.9	4.5	4.0
890	9502065/3/MERC//MERC/4/BNGL	6	81	39	8698	295	8992	64.8	72.4	5.5	4.5
881	MARS/4/9502065/3/MERC//MERC	5	80	38	8578	355	8933	63.8	69.2	7.0	5.5
889	9502065/3/MERC//MERC/4/BNGL	7	83	37	8589	294	8883	65.2	71.9	5.5	6.0
887	SP 361/BNGL	7	78	37	8039	663	8702	63.0	68.5	6.0	5.5
878	BNGL/3/BNGL//MERC/RICO	5	81	35	7883	378	8261	65.4	69.2	6.0	4.5
888	BNGL/4/9502065/3/MERC//MERC	4	78	42	7845	207	8053	60.7	68.6	7.0	5.0
876	ORIN//MERC/RICO/3/BNGL//…	6	81	34	7226	620	7846	63.5	69.2	5.0	5.0
892	EARL/9902028	5	84	35	7237	439	7676	65.1	69.3	6.0	5.5
c.v.%		11.4	1.0	4.9	6.7	45.4	8	2.2	1.8		
$LSD_{0.05}$		1.2	1.6	3.9	1213	786	1540	3.0	2.5		

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

† Leaf blast rating 0-9, where 0 = no disease, 9 = maximum disease possible.

‡ SB = Sheath blight rating 0-9, where 0 = no disease, 9 = maximum disease possible.

Table 3. Agronomic and milling performance of 2005 preliminary yield test, Group 17, specialty entries. Rice Research Station, Crowley, LA.

Entry	Pedigree	Vigor*	Days to 50% Heading	Plant Height (in)	Lodging (%)	Grain Yield (lb/A @ 12%)			Milling Yield (%)	
						Main	Ratoon	Total	Whole	Total
921	DLMT 8642…/4/DMSI/3/RSMT/5/WELLS	4	83	39		8493	3362	11855	58.8	70.2
922	DLMT/3/NWBT/KATY//82CAY21	5	79	39		8340	3255	11595	67.6	71.5
911	DLRS//AR 1142/LA 2031	5	80	38		8179	2757	10937	65.9	71.2
906	DLRS//AR1142/LA2031/3/JSMN/DLLA	7	82	37		8373	2556	10929	59.2	66.9
923	DLRS//AR 1142/LA 2031	5	82	40		8780	1908	10688	63.7	69.6
902	A-201/SADRI TYPE	4	79	38		8589	2060	10649	52.9	67.2
916	DLMT 8642…/4/DMSI/3/RSMT/?/WELLS	5	77	36		7987	2633	10620	62.8	69.4
919	DLRS//AR1142/LA2031/3/A-201	7	83	37		7874	2673	10548	60.2	68.7
907	JSMN/TORO-2//DLMT/3/A-201	7	84	43		8208	2234	10442	55.0	66.9
905	DLRS//AR1142/LA2031/3/JSMN/DLLA	6	83	40		7370	3023	10393	54.2	65.4
910	CPRS/LGRU//97 KDM X2-5	4	81	39		8725	1639	10364	65.6	70.9
903	A-201/SADRI TYPE	4	77	40	60	8860	1500	10360	56.2	67.9
925	CCDR	5	82	38		8926	1429	10355	63.2	70.4
924	DLRS	5	83	41		7029	3276	10305	66.3	70.4
909	A-201//ADAR/JODN/3/CPRS	5	79	37		7528	2725	10253	54.1	68.6
917	DLMT 8642…/4/DMSI/3/RSMT/?/WELLS	5	79	36		8344	1741	10085	61.1	69.7
904	JSMN/DLLA/3/9302065//20001-5/LMNT	6	85	39		8164	1847	10011	53.2	67.6
908	A-201//ADAR/JODN/3/CPRS	4	81	36		7493	2451	9944	56.4	64.0
914	CCDR/LGRU//97 KDMX2-5	4	82	41		6994	2347	9341	59.2	70.5
915	CCDR/LGRU//97 KDMX2-5	4	82	41		7191	2111	9302	61.2	71.1
912	DLRS//AR 1142/LA 2031	5	79	38		7627	1485	9113	68.5	72.1
913	97 KDMX2-1/WELLS	6	86	38		6966	2103	9069	46.9	66.7
918	97 KDMX2-1/WELLS	5	80	36		7395	1545	8940	62.7	69.3
901	A-201/SADRI TYPE	3	79	38		6782	869	7651	56.1	68.4
920	96SP287/95B8472	6	85	33		7056	362	7417	51.6	71.5
c.v.%		9.9	0.9	2.4		5.5	24.6	5.5	1.7	1.5
$LSD_{0.05}$		1.0	1.5	1.9		898	1093	898	2.1	2.1

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

Table 4. Agronomic and milling performance of 2005 single plot test. medium grain entries, Rice Research Station, Crowley, LA.

SP Entry	Pedigree	Vigor*	Days to 50% Heading	Height (inch)	Lodg-ing (%)	Yield (lb/A @ 12%)			Milling (%)	
						Main	Ratoon	Total	Whole	Total
252	BNGL//MERC/RICO/3/MERC/RICO//BNGL	5	84	34		9580	3742	13322	67	71.2
249	BNGL//MERC/RICO/3/MERC/RICO//BNGL	5	84	35		9400	3811	13210	69.5	71.5
266	BNGL//MERC/RICO/3/EARL	5	80	39		9733	3025	12758	69.2	72.3
265	BNGL//MERC/RICO/3/EARL	4	79	39		9572	2998	12569	69.8	71.9
264	9902028/3/BNGL//MERC/RICO	5	79	40		9614	2688	12303	69.8	71.7
235	MERC//MERC/KOSH/3/MERC/RICO//BNGL	6	82	40		9275	2882	12157	67.9	71.2
238	BNGL//MERC/RICO/3/RICO/…	5	82	39		9802	2331	12133	71.1	74.4
236	MERC/LMNT//MERC/3/BNGL/4/AB 869	5	80	36		9219	2723	11942	68.5	70.6
237	MERC/LMNT//MERC/3/BNGL/3/MERC/…	5	85	32		8939	2712	11650	65.2	68.9
294	BNGL//MERC/RICO/3/EARL	5	82	38		9202	2435	11637	67.4	71.2
251	BNGL//MERC/RICO/3/MERC/RICO//BNGL	4	82	32		8565	3057	11622	68	75.1
258	PY 678/BNGL//MERC/RICO	4	84	38		8635	2968	11603	68.6	71.3
254	BNGL//MERC/RICO/3/STRN	5	78	37		8725	2821	11547	69.1	71.4
250	JPTR	7	82	37		9292	2035	11328	69.8	73
246	BNGL/3/BNGL//MERC/RICO	5	84	36		9029	2203	11232	68.2	71.7
297	BNGL//MERC/RICO/3/EARL	4	83	36		8446	2685	11132	68.7	71.2
243	BNGL//MERC/RICO/3/STRN	4	84	37		9071	2017	11088	66	69.5
239	BNGL//MERC/RICO/3/RICO/…	4	82	38		9222	1772	10994	70.5	75.3
299	BNGL//MERC/RICO/3/EARL	5	84	32		7458	3492	10950	67.2	72.2
295	BNGL//MERC/RICO/3/EARL	5	84	36		8197	2697	10893	65.5	72.9
268	RICO/BNGL	6	80	40		9409	1455	10864	68.9	72.6
285	MARS/4/9502065/3/MERC//MERC	4	79	40		8220	2485	10705	67.3	70.6
241	LFTE/BNGL	7	79	39		9486	1183	10670	66	69.6
273	9502065/3/MERC//MERC/4/9902028	6	79	39		8310	2313	10624	65.6	71.3
263	9902028/3/BNGL//MERC/RICO	5	79	40		9625	990	10615	64	67.6
316	EARL/9902028	6	82	39		9051	1556	10606	68.8	71.5
271	9902028/3/BNGL//MERC/RICO	4	80	41		9043	1539	10582	66.6	70.1
234	9502065/BNGL	6	80	36		9280	1248	10528	68.9	72
287	MARS/4/9502065/3/MERC//MERC	4	81	37		8064	2459	10523	69.9	72.1
248	BNGL//MERC/RICO/3/MERC/RICO//BNGL	5	83	35		8358	2157	10515	67.2	72.9
240	BNGL//MERC/RICO/3/RICO/…	5	83	38		8893	1558	10450	70.6	74.4
293	9502065/3/MERC//MERC/…	5	81	39		8933	1447	10381	65.6	69.6
313	SP 361/BNGL	5	80	40		8531	1830	10360	64.2	69.8
281	EARL/GFMT	5	79	36		7965	2381	10346	68.2	71
232	BNGL/9502065	5	79	38		8815	1517	10332	68.8	71.4
282	MARS/4/9502065/3/MERC//MERC	4	78	35		7955	2094	10049	65.1	70.7
229	MERC//MERC/KOSH/3/MERC/LMNT//…	6	77	35		8302	1665	9967	70.4	73.3
270	9902028/3/BNGL//MERC/RICO	5	79	41		8851	1061	9912	64.8	68.8
304	BNGL//MERC/RICO/3/EARL	4	84	36		7447	2459	9906	69.3	71.6
259	PY 678/BNGL//MERC/RICO	5	84	39		8266	1619	9885	69.4	73
253	BNGL//MERC/RICO/3/STRN	5	78	36		7940	1917	9857	68.8	71.3
320	EARL/9902028	5	82	38		8987	858	9846	66.6	73.2
272	9502065/3/MERC//MERC/4/9902028	5	79	36		8649	1141	9791	65.2	70.1
296	BNGL//MERC/RICO/3/EARL	5	85	31		7564	2208	9772	70.6	73.6
291	9902028/3/BNGL//MERC/…	4	79	37		8646	1111	9756	68.1	72.2
262	9902028/3/BNGL//MERC/RICO	5	81	40		8955	797	9752	66.6	71.7

Continued.

Table 4. Continued.

SP Entry	Pedigree	Vigor*	Days to 50% Heading	Height (inch)	Lodg-ing (%)	Yield (lb/A @ 12%) Main	Ratoon	Total	Milling (%) Whole	Total
288	MARS/4/9502065/3/MERC//MERC	4	79	37		7880	1865	9745	63.5	68.2
302	BNGL//MERC/RICO/3/EARL	4	84	35		7261	2426	9687	67.8	70.9
247	BNGL/3/BNGL//MERC/RICO	4	79	36		8642	1012	9655	65.6	69.5
231	MERC/RICO//BNGL/3/SMARS/MARS/…	5	83	36		8658	961	9619	67.1	72.1
318	BNGL/3/ORIN//MERC/RICO//…	4	80	39		8557	1059	9616	67.7	71.5
310	BNGL//MERC/RICO/3/EARL	4	82	37		8435	1178	9613	67.1	69.6
245	BNGL/3/BNGL//MERC/RICO	4	80	35		7646	1939	9584	69.3	72
274	BNGL//MERC/RICO/3/EARL	5	84	34		7124	2429	9553	69	71.2
286	MARS/4/9502065/3/MERC//MERC	4	80	35		7982	1517	9499	65.8	69.7
267	MARS/4/9502065/3/MERC//MERC	5	79	38		8668	806	9474	64.1	68.5
308	9902028/3/BNGL//MERC/…	5	80	40		7912	1492	9404	64.8	69
290	9902028/3/BNGL//MERC/…	5	79	40		8341	1020	9361	64.7	69.3
233	RICO/BNGL	5	84	38		8315	1043	9359	65.9	70.5
284	MARS/4/9502065/3/MERC//MERC	4	79	38		7530	1822	9352	62.9	67.9
278	EARL/AB SRM 154291	5	83	33		6814	2514	9328	70	71.7
280	EARL/AB SRM 154291	3	80	35		6945	2310	9255	69.6	71.6
227	BNGL/3/MERC/RICO//MERC	4	83	36		7383	1867	9249	68.7	71.2
260	BNGL/RICO//BNGL	5	82	40		8538	709	9246	65.8	69.4
319	BNGL/3/ORIN//MERC/RICO//…	5	79	39		7339	1889	9228	68.8	71.7
283	MARS/4/9502065/3/MERC//MERC	4	79	35		8567	629	9196	63.2	68.2
301	BNGL//MERC/RICO/3/EARL	4	85	34		7141	1833	8974	70.3	72
228	MERC//MERC/KOSH/3/MERC/LMNT//…	5	77	38		7259	1713	8971	68.1	71.7
307	9902028/3/BNGL//MERC/…	5	81	39		6978	1985	8963	65.5	68.7
244	BNGL/3/BNGL//MERC/RICO	5	82	36		7763	1189	8952	64	67.2
257	RICO/BNGL//BNGL	5	83	36		8071	859	8929	66.4	70.6
279	EARL/AB SRM 154291	4	83	36		6966	1922	8888	69.2	71
305	9902028/3/BNGL//MERC/…	5	83	35		7588	1279	8867	65.2	69
325	MEDARK	5	82	36		7545	1300	8845	65.4	70
298	BNGL//MERC/RICO/3/EARL	4	82	35		7610	1200	8809	67.7	70.7
300	EARL	4	82	41		7842	941	8783	65.5	70.1
323	ORIN/3/MERC/CAM9/MARS/4/BNGL	4	81	39		7819	950	8769	66.1	70.8
321	9502065/3/MERC//MERC/4/BNGL/4/9902028	5	79	38		8227	431	8657	59.8	67.2
317	BNGL/4/9502065/3/MERC//MERC	7	82	37		7283	1351	8634	61.5	68.7
255	RICO/BNGL//BNGL	6	82	36		7830	689	8518	69.6	73.3
314	9502065/3/MERC//MERC/4/BNGL	5	80	37		7253	1248	8502	62.2	71.6
261	BNGL/RICO//BNGL	5	83	39		7604	865	8469	65.5	70.2
292	9902028/3/BNGL//MERC/…	3	78	40		7704	701	8405	59.1	68.7
315	EARL/9902028	5	80	38		7453	897	8351	66.2	70
226	MERC/RICO//BNGL/3/SMARS/MARS/…	5	83	34		6237	1981	8217	65.9	70.2
306	9902028/3/BNGL//MERC/…	5	80	39		7296	919	8215	66.5	71.9
269	SP 361/BNGL	5	79	36		7080	1068	8148	60.8	70.2
230	MERC/RICO//BNGL/3/SMARS/MARS/…	5	83	37		6311	1802	8114	67.5	71.5
242	BNGL/3/BNGL//MERC/RICO	5	79	38		7322	524	7845	68.1	71.1
309	9502065/3/MERC//MERC/…	5	80	38		7394	426	7820	63.7	68.8
312	BNGL//MERC/RICO/3/EARL	4	83	37		6293	1360	7653	65.5	71
322	ORIN/3/MERC/CAM9/MARS/4/BNGL	5	82	36		6996	386	7382	67.4	70.1
256	RICO/BNGL//BNGL	5	82	36		6763	542	7306	67.4	69.5

Continued.

Table 4. Continued.

SP Entry	Pedigree	Vigor*	Days to 50% Heading	Height (inch)	Lodg-ing (%)	Yield (lb/A @ 12%) Main	Ratoon	Total	Milling (%) Whole	Total
277	BNGL//MERC/RICO/3/EARL	5	84	35		6307	969	7277	67.9	70.5
289	PY 678/BNGL	5	84	37		6262	895	7157	64.5	70.4
303	BNGL//MERC/RICO/3/EARL	4	83	35		6999	0	6999	68.9	71.1
324	ORIN/3/MERC/CAM9/MARS/4/BNGL	5	83	33		6443	534	6977	68.6	71.4
311	BNGL//MERC/RICO/3/EARL	5	82	33		5793	1037	6830	64.8	69.1
275	BNGL	5	84	35		5746	965	6710	69	71.5
276	BNGL//MERC/RICO/3/EARL	5	83	33		4231	2059	6290	69	71.6

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

Table 5. Agronomic and milling performance of 2005 single plot test, specialty entries, Rice Research Station, Crowley, LA.

SP Entry	Pedigree	Vigor*	Days to 50% Heading	Height (inch)	Lodg-ing (%)	Yield (lb/A @ 12%) Main	Ratoon	Total	Milling (%) Whole	Total
350	TRNS	5	78	39		9607	3078	12686	62.7	67.7
371	DLRS//AR1142/LA2031/3/JSMN/DLLA	6	84	36		8023	3323	11347	56.8	69.1
366	DLRS//AR1142/LA2031/3/JSMN/DLLA	4	76	39		8385	2856	11241	63.5	70
331	DLRS//AR 1142/LA 2031 - 1200	4	82	39		8795	2371	11166	66.4	71.5
362	DLRS//AR1142/LA2031/3/JSMN/DLLA	5	84	36		9273	1866	11138	61	67.4
355	DLMT/4/NWBT/KATY/3/82CAY21/…	5	80	35		7860	3256	11116	55.3	68.6
333	A-201/SADRI TYPE	4	78	37		8706	2350	11057	57.9	68.4
370	DLRS//AR1142/LA2031/3/JSMN/DLLA	6	79	35		8289	2713	11002	57.9	67
329	DLMT 8462…/4/DMSI/5/RSMT - 1500	5	81	41		7707	3271	10979	64.9	72.2
395	JSMN/DLLA/3/9302065//20001-5/LMNT	5	86	36		6984	3686	10670	60.5	70
328	DLMT 8462…/4/DMSI/5/RSMT - 1500	5	82	41		7729	2931	10660	61.9	70.3
358	DLRS//AR1142/LA2031/3/A-201	4	78	35		7696	2962	10658	62.8	70.3
342	A-201//ADAR/JODN	3	79	42		9200	1442	10642	61.7	71
387	DLMT 8642…/4/DMSI/3/RSMT/?/WELLS	5	77	37		8381	2255	10636	65.1	70.8
336	A-201/SADRI TYPE	3	79	36		7986	2632	10618	59.3	68.7
386	DLMT 8642…/4/DMSI/3/RSMT/?/WELLS	4	78	37		7955	2646	10601	65.6	71.6
388	DLMT 8642…/4/DMSI/3/RSMT/?/WELLS	3	79	37		7542	3020	10562	64.4	70.9
330	DLMT 8462…/4/DMSI/5/RSMT - 1500	4	80	41		7243	3271	10514	65.7	72.5
364	DLRS//AR1142/LA2031/3/JSMN/DLLA	4	78	39		8103	2262	10365	57.9	67
363	DLRS//AR1142/LA2031/3/JSMN/DLLA	5	80	38		8279	2059	10338	62.3	70.1
337	A-201/SADRI TYPE	4	79	39		8422	1832	10254	55.2	67.1
381	DLMT 8462…/4/DMSI/5/RSMT/5/WELLS	5	84	33		6987	3174	10161	60.2	70.9
385	DLMT 8642…/4/DMSI/3/RSMT/?/WELLS	5	77	35		7765	2344	10109	65.8	71.2
351	JSMN/DLLA/3/9302065//20001-5/LMNT	5	87	40		7483	2621	10104	51.4	64.7
334	A-201/SADRI TYPE	4	80	34		7630	2468	10097	59.5	69.1
367	DLRS//AR1142/LA2031/3/JSMN/DLLA	5	80	37		7723	2305	10028	59.4	67.2
390	DLMT 8642…/4/DMSI/3/RSMT/?/WELLS	4	78	33		7958	2009	9967	65.5	71.1
344	DLRS//AR 1142/LA 2031	5	79	37		7267	2644	9911	68.2	72.6

Continued.

Table 5. Continued.

SP Entry	Pedigree	Vigor*	Days to 50% Heading	Height (inch)	Lodg-ing (%)	Yield (lb/A @ 12%) Main	Ratoon	Total	Milling (%) Whole	Total
389	DLMT 8642…/4/DMSI/3/RSMT/?/WELLS	4	79	33		7404	2505	9910	66.8	73.1
369	DLRS//AR1142/LA2031/3/JSMN/DLLA	6	84	39		7877	2015	9893	61.3	68.4
345	JSMN/DLLA//CCDR/LGRU	5	85	35		6878	2919	9797	59.4	66.9
349	JSMN/DLLA/3/9302065//20001-5/LMNT	4	84	36		7066	2715	9781	54.3	66.8
400	CHNR	4	84	39		8809	793	9602	64.9	72.5
379	DLRS//AR 1142/LA 2031	5	85	38		6575	3016	9591	63.2	69.8
335	A-201/SADRI TYPE	4	78	40	40	8110	1480	9590	57.3	66.4
353	JSMN/DLLA/3/9302065//20001-5/LMNT	5	85	38		6901	2666	9567	61.3	68.2
368	DLRS//AR1142/LA2031/3/JSMN/DLLA	5	84	35		7706	1832	9538	59.5	67.8
357	DLMT 8462…/4/DMSI/5/RSMT/5/WELLS	4	78	34		6433	3034	9468	62.5	67.3
346	JSMN/DLLA//CCDR/LGRU	5	86	36		6594	2830	9424	63.2	69.3
393	JSMN/DLLA/CCDR/LGRU	5	83	37		6302	2923	9225	61.3	70.6
361	DLRS//AR1142/LA2031/3/JSMN/DLLA	5	79	35		6660	2501	9161	61.9	70.8
397	DLRS//AR1142/LA2031/3/A-201	5	81	37		6736	2384	9119	52.2	67.5
356	DLMT 8462…/4/DMSI/5/RSMT/5/WELLS	4	80	36		6780	2272	9052	60	68.9
365	DLRS//AR1142/LA2031/3/JSMN/DLLA	5	84	37		7569	1331	8900	59	66.4
373	DLRS//AR1142/LA2031/3/JSMN/TORO-2	7	84	38		5818	3052	8870	67.4	71.2
399	DLRS//AR1142/LA2031/3/JSMN/DLLA	6	85	36		6311	2507	8818	53.1	68.5
338	A-201/SADRI TYPE	5	79	34		7768	988	8755	65	69.2
352	JSMN/DLLA/3/9302065//20001-5/LMNT	4	87	39		6207	2446	8653	57.8	68.5
332	DLRS//AR 1142/LA 2031 - 1200	5	82	37		6818	1821	8639	63.3	71.4
343	CPRS/LGRU//97KDM X2-5	4	84	37		6656	1965	8621	59.8	66.4
398	DLRS//AR1142/LA2031/3/A-201	5	84	34		7108	1343	8450	60.9	67.7
377	DLRS//AR 1142/LA 2031	5	84	31		6183	2169	8352	61.9	70
396	DLRS//AR1142/LA2031/3/A-201	5	83	36		7491	772	8264	58.9	68.4
360	DLRS//AR1142/LA2031/3/JSMN/DLLA	5	79	36		7077	1137	8214	63.7	71.5
380	JSMN/DLLA/3/9302065//20001-5/LMNT	5	85	33		6196	1992	8188	57	68.3
394	DLMT 8462…/4/DMSI/5/RSMT/5/WELLS	4	83	33		6442	1723	8165	65.9	73.9
391	DLMT 8642…/4/DMSI/3/RSMT/?/WELLS	4	83	33		7266	876	8142	66.6	71.9
327	CPRS/DLRS	4	83	38		7578	495	8073	63.4	70.6
354	JSMN/DLLA/3/9302065//20001-5/LMNT	5	84	41		5922	2117	8039	60.1	68.9
341	A-201/SADRI TYPE	4	79	39		7698	321	8019	60.1	68.5
392	JSMN/DLLA/CCDR/LGRU	4	85	39		6945	987	7932	58.3	67.8
378	DLRS//AR 1142/LA 2031	5	83	36		6676	1136	7812	60.9	68.3
372	DLRS//AR1142/LA2031/3/JSMN/DLLA	7	84	34		6491	1140	7630	52.7	66.6
347	JSMN/DLLA//CCDR/LGRU	5	88	37		6033	1303	7337	58.7	67.6
359	DLRS//AR1142/LA2031/3/JSMN/DLLA	5	80	39		6476	764	7240	58.4	69
340	A-201/SADRI TYPE	4	79	39		6959	233	7192	55.6	67.3
326	CPRS/DLRS	4	91	37		4449	2696	7146	62.6	68.8
376	A-201//ADAR/JODN/3/CPRS	4	85	37		5443	1652	7095	54.9	68.4
348	JSMN/DLLA/3/9302065//20001-5/LMNT	4	85	37		6960	0	6960	60.6	69.4
382	DLMT 8462…/4/DMSI/5/RSMT/5/WELLS	4	79	33		5259	1269	6527	58.8	69.6
339	A-201/SADRI TYPE	4	81	34		5899	562	6461	56.3	66.6
375	DLRS	5	84	38		3924	2451	6375	65.4	71
384	97 KDMX2-1/WELLS	4	87	34		4142	2139	6280	55.6	67.6
374	JSMN/TORO-2//DLMT/3/A-201	7	86	36		4454	1817	6271	48.3	68.1
383	97 KDMX2-1/WELLS	5	90	32		2153	1493	3646	49	69.3

Table 6. Agronomic and milling performance of eight medium grain experimental lines and three selected check varieties in 2005 Uniform Regional Nursery, Crowley, LA.

Entry	RU #	Pedigree	Grain Type*	Vigor†	Days to 50% Heading	Plant Height (inch)	Lodging (%)	Grain Yield (lb/A @ 12%)			Milling Yield (%)	
								Main	Ratoon	Total	Whole	Total
134	RU0502134	BNGL/MERC/RICO/3/MERC/RICO//BNGL	M	5	91	39		10313	1166	11479	64.7	71.3
131	RU0502131	MERC/RICO//BNGL/3/SMARS/SMARS/…	M	4	94	42		9993	1459	11452	63.9	70.6
137	RU0502137	MERC/RICO//BNGL/3/SMARS/MARS/…	M	4	93	40		10785	258	11044	61.7	70.1
125	RU0502125	MERC/RICO//BNGL/3/SMARS/SMARS/…	M	4	93	40		10111	904	11016	66.2	72.4
031	RU0502031	BNGL//MERC/RICO/3/MERC/RICO//BNGL	M	5	90	36		9423	1406	10829	64.5	70.4
140	RU0502140	MERC/RICO//BNGL/3/SMARS/MARS/…	M	4	94	39		9925	873	10798	63.4	71.5
028	RU0402028	BNGL//MERC/RICO/3/MERC/…	M	5	92	36		9562	1221	10783	61.2	70.3
146	RU0502146	SMARS/MARS//…/3/MERC/RICO//BNGL	M	5	93	39		9204	1463	10667	64.4	71.9
037	JPTR	JUPITER	M	6	94	37		9460	1117	10577	66.1	71.2
039	MDRK	MEDARK	M	5	94	37		8943	876	9819	63.6	67.9
038	BNGL	BENGAL	M	4	93	40		9204	574	9778	63.4	71.0

*M = Medium grain.
† Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

Table 7. Agronomic and milling performance of four aromatic specialty lines and two selected check varieties in 2005 Uniform Regional Nursery, Crowley, LA.

Entry	RU #	Pedigree	Grain Type*	Vigor†	Days to 50% Heading	Plant Height (in)	Lodging (%)	Grain Yield (lb/A @ 12%)			Milling Yield (%)	
								Main	Ratoon	Total	Whole	Total
199	CPRS	CYPRESS	L	5	95	40		9334	723	10057	65.4	69.3
183	RU0502183	JSMN/DLLA//96SP287	L(A)	6	92	36		8613	993	9606	59.0	70.1
025	RU0402131	JSMN/DLLA//CPRS/KDM	L(A)	5	89	38		7632	1843	9476	63.9	71.7
177	RU0502177	96SP287/95B8472	L(AE)	5	91	41		7618	1564	9182	60.4	69.3
180	RU0502180	JSMN/DLLA//DLLA	L(A)	5	92	40		7942	460	8402	62.8	68.9
158	DLRS	DELLROSE	L(A)	7	93	42		6077	1626	7703	64.6	70.6

*L = Long grain; L(A) = Long grain aromatic; and L(AE) = Long grain aromatic and kernel elongating.
† Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

Table 8. Yield, milling, and agronomic performance of five medium grain lines and two check varieties averaged over seven locations across Louisiana, 2005.

Entry	Source	Pedigree	Vigor*	Days to 50% Heading	Plant Height (inch)	Yield (lb/A @ 12%)	Milling (%) Whole	Milling (%) Total
235	05URN 125	MERC/RICO//BNGL/3/SMARS/SMARS/…	4.5	85	37	7719	63.3	70.6
212	JUPITER	JUPITER	5.6	86	37	7362	61.5	68.1
233	05URN 031	BNGL//MERC/RICO/3/MERC/RICO//BNGL	5.3	84	36	7252	63.0	71.3
234	05URN 028	BNGL//MERC/RICO/3/MERC/…	4.5	86	36	7144	62.4	70.1
213	BENGAL	BENGAL	4.0	86	39	6855	61.1	69.1
237	05URN 146	SMARS/MARS//…/3/MERC/RICO//BNGL	4.7	86	38	6744	59.4	69.7
236	05URN 140	MERC/RICO//BNGL/3/SMARS/MARS/…	4.5	86	37	6608	61.1	68.8

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

Table 9. Yield, milling, and agronomic performance of three aromatic specialty lines and Cocodrie averaged over seven locations across Louisiana, 2005.

Entry	Source	Pedigree	Vigor*	Days to 50% Heading	Plant Height (inch)	Yield (lb/A @ 12%)	Milling (%) Whole	Milling (%) Total
205	COCODRIE	COCODRIE	4.9	84	38	7282	61.0	69.8
249	05URN 025	JSMN/DLLA//CPRS/KDM	5.7	83	36	5740	59.5	71.3
250	05URN 177	L202/LEAH//TORO/3/IR67016	4.9	83	38	5864	53.5	72.5
251	05URN 183	JSMN/DLLA//96SP287	6.1	85	36	5521	50.7	68.6

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

Table 10. Agronomic and milling performance of four aromatic specialty experimental lines in the advanced specialty trial, Jefferson Davis Parish, 2005.

Entry	Source	Seedling Vigor*	Days to 50% Heading	Plant Height (inch)	Yield (lb/A @ 12%)	Milling Yield (%) Whole	Milling Yield (%) Total	Sheath Blight†
001	JSMN/DLLA	6	92	40	7406	56.1	67.4	8
002	96 INT/AR 1188	4	90	40	7137	62.2	67.8	8
003	JSMN/DLLA//96SP287	6	91	37	6162	56.6	69.2	8
004	96SP287/95B8472	5	86	38	5142	51.1	71.5	9
c.v. %		10.8	1.1	3.1	5.0	4.3	1.7	8.6
$LSD_{0.05}$		0.9	1.6	1.9	518	7.7	3.7	1.1

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.
†Sheath blight rating 0-9, where 0 = no disease, 9 = maximum disease possible.

DEVELOPMENT OF ELITE SOUTHERN U.S. LONG-GRAIN RICE VARIETIES THROUGH BOTH CROSS-BREEDING AND THE DOUBLED HAPLOID TECHNOLOGY

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This project is focused on the development of long-grain rice varieties by combining both conventional breeding methods and rice anther culture. The breeding goals include high yield potential, better milling and grain quality, good seedling vigor and stand establishment, early maturing, lodging resistance, and improved disease resistance.

The 2005 field evaluation and selection of breeding materials included 20,000 progeny rows. Of those, 10,000 were doubled haploid (DH) lines and the remaining rows came from cross-breeding. Over 1,200 progeny rows were selected to advance and another 571 rows were bulk-harvested as candidates for the preliminary yield trials in 2006. The 2005 preliminary yield trials included 96 entries in replicated (PY) and 96 entries in single plot (SP) test. The agronomic performance of these lines was listed in Tables 1 to 5. Twelve advanced lines were included in the Uniform Regional Rice Nursery (URN) and/or Commercial-Advanced test (CA) that were carried out cooperatively by the five southern rice growing states and at seven locations across Louisiana, respectively. All 12 entries were DH lines and the URN entry numbers were 011, 042, 051, 062, 071, 082, 085, 088, 091, 094, 128, and 149. The yield, milling, and the other agronomic characteristics of these lines were listed in tables 6 and 7.

In 2005, a total of 165 new crosses were made by using bridging parents, which have high yield, resistance to blast and sheath blight, and high regeneration ability. About 4,000 doubled haploid plants (DH1) were regenerated. In addition, two DH populations with various sheath blight resistance were developed and adopted by RiceCap – a USDA CSREES multi-state research project. A number of advanced lines with yield potential comparable with the predominant varieties such as Cocodrie and Cheniere will be closely evaluated, especially for grain quality in 2006.

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Table 1. Agronomic and milling performance of 2005 preliminary yield test, Group 11, anther culture entries. Rice Research Station, Crowley, LA.

Entry	Pedigree	Vigor*	Days to 50% Heading	Plant Height (in)	Lodging (%)	Grain Yield (lb/A @ 12%)			Milling Yield (%)		Blast†	SB‡
						Main	Ratoon	Total	Whole	Total		
774	7242/AC110DH3	5	82	38		8680	3820	12500	64.1	70.1	2.5	7
768	AR1053/97CR233DH1	5	88	41		7949	4339	12288	58.6	68.2	5.5	6.5
759	AC273DH2/AC358DH2	5	78	38	20	8774	3479	12253	67.2	71.6	5	6.5
753	AC425DH2/AC431DH2	4	83	45		8953	3156	12109	65.5	71.8	5.5	6
770	AC274DH2/AC407DH2	5	83	42		8053	3777	11830	59.4	69.6	5.5	4.5
766	AC140DH2/AC101DH2	6	84	46		7714	3700	11415	63.4	70.2	6	4.5
763	AC273DH2/AC274DH2	4	78	39	25	8260	3127	11387	64.5	70.0	3.5	6.5
757	EPAGRI 107/LMNTDH4	5	82	34		8547	2743	11290	67.5	71.8	6	7
765	JAF4DH3	4	82	42		8427	2766	11193	65.6	70.6	3.5	6.5
755	AC101DH2/AC139DH2	6	83	40		8570	2513	11084	65.4	70.2	2.5	7.5
773	AC110DH2/97CR165DH2	6	80	41		8223	2759	10982	64.8	70.6	4.5	6.5
758	AC425DH2/AC431DH2	4	80	41	10	7911	3021	10932	64.1	70.9	6	5.5
762	AC110DH4	5	82	37		7912	2903	10814	66.2	71.6	4.5	7
775	CCDR	5	82	38		8388	2372	10760	65.3	71.9	2.5	7.5
772	JAF4DH3	5	82	37		8704	2033	10737	67.6	72.6	2.5	8
752	AC110DH2/97CR165DH2	5	82	40		8712	2018	10730	59.9	65.7	2.5	6.5
761	AC140DH2/AC101DH2	4	77	52	15	7513	3132	10645	59.2	67.9	3	3.5
767	SP291/SP294	6	79	39		8134	2246	10380	63.9	70.7	5	4.5
754	SP301/PY327DH3	4	79	41		8392	1932	10325	67.6	72.3	5.5	5.5
769	AC357DH2/AC347DH2	5	76	38		7870	2284	10154	58.9	69.6	4.5	7.5
771	PY737/SP316	5	85	42		8079	2068	10147	68.4	72.6	3.5	5.5
756	SP306/PY327DH3	5	82	39		8536	1546	10082	67.8	72.1	3	7.5
760	9863910DH2/AR1053	5	84	41		7112	2930	10042	64.1	71.9	2.5	6
764	AC274DH2/AC402DH2	5	83	48		8125	1754	9879	52.2	66.7	5.5	4.5
751	AC401DH2/AC347DH2	5	87	39		7244	2178	9422	60.8	67.9	3	4.5
c.v.%		11.2	2.1	3.5		4.7	19.1	5.6	3.1	2.9		
$LSD_{0.05}$		1.1	3.5	3.0		796	1082	1255	4.0	4.3		

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

† Leaf blast rating 0-9, where 0 = no disease, 9 = maximum disease possible.

‡ SB = Sheath blight rating 0-9, where 0 = no disease, 9 = maximum disease possible.

Table 2. Agronomic and milling performance of 2005 preliminary yield test, Group 12, anther culture entries. Rice Research Station, Crowley, LA.

Entry	Pedigree	Vigor*	Days to 50% Heading	Plant Height (in)	Lodging (%)	Grain Yield (lb/A @ 12%)			Milling Yield (%)		Blast†	SB‡
						Main	Ratoon	Total	Whole	Total		
785	AC110DH3/0042809	5	83	41		10187	2619	12805	66.6	71.3	2	6.5
780	03 CK 160	5	80	40		8774	3783	12558	66.0	71.2	3	7
783	AC110DH3/0042809	4	83	39		9772	2556	12328	63.5	70.1	3	7
788	AC423/AC425	4	82	43		8756	3450	12206	67.2	71.4	5.5	6
782	AC110DH3/0042809	5	82	40	45	9703	2432	12134	65.0	70.0	2	7.5
784	AC110DH3/0042809	5	83	40		9473	2486	11959	64.2	70.3	3	7
800	TRNS	5	77	42		9135	2731	11865	60.8	68.0	4	7.5
792	PY658/H526	5	81	46		9905	1834	11739	68.9	71.8	7.5	4.5
794	PY658/H526	5	81	46		9535	1953	11488	68.2	71.2	8	6
786	AC111DH3/AC468DH2	4	82	40		8732	2630	11362	64.3	69.4	2	8
798	PY658/FRCS	5	82	40		9290	1908	11198	65.3	70.2	5.5	6
781	AC110DH3/0042809	5	82	40		9448	1680	11128	63.2	69.8	2.5	8
797	PY658/H131	5	82	42		9046	2007	11053	66.7	71.1	6	5
779	AC105DH3/0047276	5	82	39		9317	1480	10797	64.8	70.7	2.5	7
789	AC468/AC401	5	80	45		8005	2653	10658	68.6	71.5	7	7
795	PY658/H131	6	82	39		8744	1522	10266	67.7	70.6	6.5	5
791	PY658/H526	6	80	46		8947	1297	10243	67.8	71.0	8.5	4
790	PY654/H526	5	86	42		6898	3282	10179	68.3	71.9	2.5	7
796	PY658/H131	5	82	40		8902	1139	10041	66.5	70.6	6.5	7
777	AC105DH3/AC124DH3	5	81	39		8155	1695	9850	64.8	71.8	3	7
787	AC407/AC274	5	80	44		6454	3307	9761	54.0	64.8	7	5.5
778	AC105DH3/0047276	5	84	37		8106	1423	9529	62.8	69.4	2.5	8
799	PY661/SP271	5	85	43		6441	3058	9500	67.3	71.1	3.5	7
793	PY658/H526	5	81	44		8150	1226	9377	70.6	73.6	8.5	5
776	0043676/AC105DH3	5	81	40		8227	597	8825	66.5	70.1	2.5	6
c.v.%		10.2	1.3	2.5		3.2	29.1	6.7	2.7	2.3		
$LSD_{0.05}$		1.0	2.2	2.1		580	1313	1545	3.7	3.3		

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

† Leaf blast rating 0-9, where 0 = no disease, 9 = maximum disease possible.

‡ SB = Sheath blight rating 0-9, where 0 = no disease, 9 = maximum disease possible.

Table 3. Agronomic and milling performance of 2005 preliminary yield test, Group 13, anther culture entries. Rice Research Station, Crowley, LA.

Entry	Pedigree	Vigor*	Days to 50% Heading	Plant Height (in)	Lodging (%)	Grain Yield (lb/A @ 12%)			Milling Yield (%)		Blast†	SB‡
						Main	Ratoon	Total	Whole	Total		
808	PY737/SP316	4	85	43		8951	2393	11344	68.4	72.4	2.5	5.5
803	PY728/PY737	4	84	52	35	8188	2897	11085	66.7	71.1	2	3.5
801	AC105DH2/967648DH4	6	84	39		8699	2373	11073	66.2	70.8	3	7.5
807	PY737/SP316	5	86	42		8469	2472	10941	67.6	72.2	2.5	5.5
805	PY728/PY737	5	89	32		7464	3435	10899	66.8	71.4	3	7
825	CHNR	5	85	37		8887	1851	10738	65.3	71.1	6.5	6.5
824	SP291/H226	5	82	41		8248	2287	10534	69.2	73.2	5.5	7.5
814	SP257/PY743	4	81	42		7443	2983	10426	68.3	73.0	4.5	6.5
817	SP274/FRCS	5	81	40		6776	3268	10044	64.0	72.0	1.5	7.5
806	PY728/PY737	6	89	42		6750	3184	9934	67.9	71.4	2.5	3.5
815	SP271/PY671	5	78	40	70	7505	2404	9909	63.2	69.4	5.5	8
802	PY728/PY749	5	86	32		7394	2410	9804	65.0	71.3	6	6.5
823	SP289/PY737	5	86	44		6821	2849	9671	67.9	71.4	2	6.5
809	PY749/H270	5	84	40		7503	2080	9582	66.5	69.9	2	6
816	SP271/PY671	5	78	41	50	7258	2316	9574	65.5	70.8	5.5	7
811	PY749/H229	4	84	42		7229	2319	9548	65.8	71.6	7	8
804	PY728/PY737	5	86	42		7309	2158	9467	69.3	72.9	3	5.5
820	SP289/PY737	5	87	44		6549	2850	9399	66.0	70.3	2	6
821	SP289/PY737	4	86	42		6471	2894	9365	65.9	71.4	2.5	5
812	PY749/H229	5	84	42		7068	2291	9359	66.9	71.5	7	7.5
810	PY749/H270	5	85	41		7264	1954	9218	66.3	70.0	2.5	7
822	SP289/PY737	5	86	43		6384	2828	9212	68.4	71.0	2	6.5
818	SP289/SP294	4	80	40		6766	2389	9155	66.2	72.1	2	7.5
819	SP289/PY737	5	80	39		6737	2100	8837	64.7	71.6	3	7.5
813	PY749/H229	5	84	40		3966	2464	6431	63.5	71.1	7	7.5
c.v.%		12.6	1.2	3.4		14.1	19.0	10.4	1.7	1.1		
$LSD_{0.05}$		1.2	2.0	2.9		2124	998	2115	2.3	1.7		

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

† Leaf blast rating 0-9, where 0 = no disease, 9 = maximum disease possible.

‡ SB = Sheath blight rating 0-9, where 0 = no disease, 9 = maximum disease possible.

Table 4. Agronomic and milling performance of 2005 preliminary yield test, Group 14, anther culture entries. Rice Research Station, Crowley, LA.

Entry	Pedigree	Vigor*	Days to 50% Heading	Plant Height (in)	Lodging (%)	Grain Yield (lb/A @ 12%)			Milling Yield (%)		Blast†	SB‡
						Main	Ratoon	Total	Whole	Total		
846	SP301/H226	4	79	40		9055	3078	12132	67.3	72.1	6	6.5
832	SP294/H327	5	83	43		8612	3274	11886	67.4	71.8	7.5	6
850	WELLS	5	86	41		9020	2811	11831	63.1	71.3	6.5	5.5
833	SP294/H174	5	82	42		8023	3477	11500	66.9	70.8	5	5.5
838	SP301/H327	5	79	40		8556	2885	11441	69.0	73.0	5.5	7
830	SP294/H327	5	84	43	35	8067	3247	11314	66.4	69.9	7	6
843	SP301/H327	5	79	40		8635	2579	11214	66.9	72.0	7	6.5
831	SP294/H327	6	83	42		7959	3203	11162	68.2	71.4	7	5.5
848	SP305/SP294	5	79	40		8466	2566	11032	70.7	73.4	6.5	8
828	SP291/FRCS	5	83	38		8278	2728	11006	63.9	70.1	6.5	7
844	SP301/H226	5	78	43		8316	2658	10974	67.8	72.1	5.5	6
837	SP301/H327	4	80	40		8713	2230	10944	67.1	71.2	2.5	7.5
826	SP291/FRCS	6	87	39		8749	2193	10941	61.3	68.5	7.5	7
842	SP301/H327	4	78	40		8571	2354	10925	66.8	71.3	6.5	8
840	SP301/H327	5	78	39		8358	2439	10797	66.4	71.2	5.5	7.5
849	SP305/SP290	5	79	40		8380	2338	10718	64.6	70.1	4.5	8
847	SP301/H226	5	79	37		8452	2230	10681	67.5	71.7	6.5	7
841	SP301/H327	4	78	41		8276	2280	10556	68.1	71.7	5	8
835	SP295/SP294	5	82	41		8158	2156	10313	67.6	71.3	6	6
839	SP301/H327	4	79	39		8402	1473	9876	66.5	71.4	2.5	7
829	SP294/H327	5	84	42	15	7543	2251	9794	66.2	69.5	7	5.5
845	SP301/H226	5	82	38		7438	2296	9734	65.5	71.5	6	6.5
836	SP301/H327	4	80	39		7611	2079	9690	66.5	71.1	3	7
834	SP294/H174	5	85	38		7428	1979	9406	64.8	71.2	6	6.5
827	SP291/FRCS	5	85	37		8019	1323	9342	61.7	71.0	5	6
c.v.%		11.3	1.7	2.9		6.3	19.8	7.4	1.7	1.4		
$LSD_{0.05}$		1.1	2.9	2.4		1073	1012	1641	2.3	2.0		

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

† Leaf blast rating 0-9, where 0 = no disease, 9 = maximum disease possible.

‡ SB = Sheath blight rating 0-9, where 0 = no disease, 9 = maximum disease possible.

Table 5. Agronomic and milling performance of 2005 single plot test, anther culture lines, Rice Research Station, Crowley, LA.

SP Entry	Pedigree	Vigor*	Days to 50% Heading	Height (inch)	Lodg-ing (%)	Yield (lb/A @ 12%)			Milling (%)	
						Main	Ratoon	Total	Whole	Total
197	0043676/AC105DH3	4	78	37		10153	4393	14546	70.1	73.5
162	SP304/SP295	4	81	38		10357	2972	13329	62.7	69.2
222	SP305/SP264	4	79	41		9581	3496	13077	68.6	72.7
152	SP295/SP290	4	81	40		9801	3160	12961	62.4	69
223	PY671/PY748	4	80	43		9610	3346	12956	64.6	70.9
172	AC402DH2/AC616DH1	4	83	39		9382	3499	12881	66.3	71
164	SP304/SP295	4	83	37		9416	3412	12829	66.4	70.6
154	SP295/SP290	5	78	39		8714	3908	12623	63.3	70.7
213	AC167DH3/AC105DH3	5	84	38		9306	3189	12494	63.8	68.8
200	TRNS	5	76	41		9946	2404	12349	60.7	68.7
202	967648DH4/AC102DH2	4	81	39		9431	2887	12318	65.3	70
140	PY739/SP290	5	79	41		9663	2613	12277	62.8	71.7
184	PY651/FRCS	5	79	44		9393	2877	12270	67.9	73
136	PY651/CRRI-A	4	80	39		8814	3409	12223	67.3	71.3
206	AC105DH3/AC285DH2	5	82	33		9203	2992	12195	64.2	72.4
195	AC407DH2/AC425DH2	4	79	45	30	9457	2695	12153	67.6	73
146	PY745/PY669	5	80	39		9080	3054	12134	65.6	72
224	PY728/PY737	4	86	48		8561	3503	12065	62	67.6
171	AC402DH2/AC616DH1	5	84	37		8248	3737	11985	61.7	67.7
156	SP295/SP290	5	82	37		8563	3412	11975	63.4	71
168	AC167DH3/AC273DH2	5	83	39		8892	3074	11966	64.7	70.4
137	PY674/FRCS	5	86	43		8060	3882	11942	67.2	70.5
189	967648DH4/AC102DH2	4	79	40		9274	2657	11931	67.8	72
139	PY674/SP275	5	86	42		8519	3350	11869	66.2	70
187	SP306/SP271	5	79	41		9306	2562	11868	69.7	73
221	SP305/SP264	4	78	39		8823	3038	11861	66	71.8
150	CCDR	5	83	39		10119	1560	11679	64.7	71.9
165	SP304/SP295	5	80	41		8285	3355	11640	56.2	67.8
181	SP301/H287	4	78	42		8601	3005	11607	70.2	73
158	SP304/PY662	5	83	37		8596	2989	11585	62.9	71.1
174	AC425DH2/AC616DH1	5	83	39		8744	2790	11534	62.1	70.7
128	SP306/SP290	4	82	39		9579	1942	11521	67.4	72.2
161	SP304/SP295	5	84	35		9352	2101	11453	65.3	71.2
212	AC167DH3/AC105DH3	5	85	35		8730	2687	11417	63.5	72.9
163	SP304/SP295	5	82	41		7730	3676	11407	61.5	71
132	SP314/SP292	4	81	40		9220	2147	11367	60.5	74.1
211	AC167DH3/AC105DH3	5	84	34		8851	2461	11312	62.7	72.4
216	SP290/PY662	4	81	41		8855	2457	11312	66.5	70.7
218	SP290/PY287	5	81	39		9269	2011	11279	66.1	71
167	AC405DH2/AC401DH2	4	81	40		9690	1582	11271	58.6	69.5
193	AC405DH2/AC401DH2	4	83	39		9922	1348	11270	62	72.3
220	SP290/PY287	5	81	40		9167	2067	11234	65.6	71.6
199	AC105DH3/0047276	4	83	41		9617	1578	11194	63.9	71.4
203	AC111DH3/AC468DH2	5	87	39		8765	2409	11174	63.1	71
219	SP290/PY287	5	81	39		8853	2243	11096	67.3	72.3
129	SP306/SP271	4	80	38		9148	1934	11082	67.1	70.7

Continued.

Table 5. Continued.

SP Entry	Pedigree	Vigor*	Days to 50% Heading	Height (inch)	Lodg-ing (%)	Yield (lb/A @ 12%) Main	Ratoon	Total	Milling (%) Whole	Total
217	SP290/PY287	5	81	40		8845	2216	11061	64.9	70.2
194	AC407DH2/AC425DH2	4	81	43	30	8481	2574	11055	67.5	72.8
127	SP306/SP294	5	81	40		7974	3079	11053	66.5	71.5
135	SP316/H526	5	79	44		9206	1843	11050	67.5	72.6
133	SP314/SP290	5	80	40		8630	2415	11045	67.8	74.2
225	FRCS	5	82	41		9181	1862	11043	55.3	70.9
143	PY745/PY269	4	84	41		8527	2394	10922	64.3	72
196	AC425DH2/AC431DH2	5	83	44		8355	2533	10887	62.3	69.5
204	AC105DH3/0047276	5	86	37		9400	1358	10758	63.4	72.1
160	SP304/SP295	4	84	42		9100	1649	10749	66.2	71.3
179	SP275/FRCS	4	80	45		8435	2236	10671	65.5	71.1
155	SP295/SP290	5	83	36		7220	3447	10667	59	69.6
166	SP301/SP290	5	83	42		9365	1263	10629	67.7	74
180	SP289/FRCS	4	77	46		7715	2912	10627	64.6	71.1
215	AC101DH1/DREW	5	81	34		8499	2123	10622	64.2	69.2
182	AC176DH1/9954141DH2	5	79	41		8420	2190	10611	64.7	72
186	SP264/FRCS	4	79	42		8060	2524	10584	66.6	72.1
205	AC105DH3/AC285DH2	5	81	36		7536	3021	10557	65.5	71.4
173	AC407DH2/AC262DH2	5	78	40		7692	2739	10431	64.4	71.2
144	PY745/PY269	5	80	37		7667	2747	10414	60.8	68.1
157	SP304/PY662	5	84	35		8444	1969	10413	62.4	69.5
138	PY674/SP275	5	84	40		7182	2989	10171	67	71
151	SP295/PY662	5	82	44		8637	1534	10170	61.4	69.2
198	AC105DH3/0047276	5	82	39		8843	1314	10157	59.6	72.4
210	AC167DH3/AC105DH3	5	85	33		8556	1595	10151	59.2	70.7
130	SP306/PY743	5	81	40		8456	1650	10106	59.2	73.4
141	PY745/PY269	5	86	41		8311	1778	10089	68.3	71.8
185	PY737/SP316	4	83	45		8310	1711	10020	69.5	74.9
145	PY745/PY269	5	80	38		7552	2373	9925	62.3	71.9
176	SP295/H327	5	81	36		8215	1709	9924	64.2	68.4
178	SP274/H327	4	80	43		7221	2688	9909	68.7	73
192	PY658/H229	5	83	39		9267	633	9900	64.7	72.3
142	PY745/PY269	5	85	43		8491	1312	9803	65.7	72.2
214	AC111DH3/AC468DH2	4	85	37		8318	1460	9778	62.8	70
131	SP306/H327	4	83	37		7201	2559	9760	65.3	70.5
153	SP295/SP290	5	83	38		7994	1752	9746	65.6	69.7
147	PY745/PY669	5	85	38		6579	3097	9677	59	68.5
208	AC167DH3/0047276	4	87	37		6807	2668	9475	61.6	73.1
159	SP304/PY662	5	83	41		8060	1401	9460	56.9	68.6
134	SP314/PY743	4	80	41		6821	2553	9374	68.4	72.2
126	SP305/H287	5	81	39		6585	2768	9353	65.3	69.8
183	SP306/H327	4	80	40		7236	2104	9341	65.5	70.2
188	SP306/H327	4	84	39		7316	2013	9329	62.9	68.7
175	CHNE	5	85	37		8202	974	9177	65.7	72.7
201	AC167DH3/0047276	5	88	34		6335	2620	8955	66	71.3
190	97CR210DH2/AC140DH2	6	89	38		5854	3026	8881	64.8	71.3
207	AC167DH3/0047276	5	88	41		5754	2967	8720	58	69.5

Continued.

Table 5. Continued.

SP Entry	Pedigree	Vigor*	Days to 50% Heading	Height (inch)	Lodg-ing (%)	Yield (lb/A @ 12%) Main	Ratoon	Total	Milling (%) Whole	Total
177	PY730/H167	5	80	37		7319	913	8233	62.7	71.7
170	AC167DH3/AC273DH2	5	80	39		7086	1134	8220	52	73.7
191	JSMNF3/97CR233DH1	5	79	45		6802	1389	8191	65.6	71.9
209	AC167DH3/0047276	5	87	34		6354	1388	7743	65.1	72.4
169	AC167DH3/AC273DH2	6	85	39		5920	1775	7695	57.6	73
149	SP295/CRRI-A	6	85	39		2774	734	3508	38.5	68.3
148	SP295/CRRI-A	6	85	38		2982	465	3446	54.8	69.7

*Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

Table 6. Yield, milling, and agronomic performance of 11 anther culture-derived doubled haploid lines and three check varieties averaged over seven locations across Louisiana, 2005.

Entry	Source	Grain Type†	Vigor‡	Days to 50% Heading	Plant Height (inch)	Yield (lb/A @ 12%)	Milling (%) Whole	Total
241	05URN 062	L	4.3	84	44	7897	58.3	70.0
246	05URN 091	L	4.8	82	39	7829	62.0	72.1
240	05URN 051	L	5.2	84	41	7771	60.8	69.6
238	05URN 011	M	5.1	82	41	7747	60.8	68.4
239	05URN 042	L	4.8	83	38	7584	60.8	70.4
212	JUPITER	M	5.6	86	37	7362	61.5	68.1
247	05URN 094	L	4.9	83	40	7326	61.9	69.9
205	COCODRIE	L	4.9	84	38	7282	61.0	69.8
244	05URN 085	L	5.8	84	38	7258	61.9	70.0
248	05URN 128	L	4.7	84	40	7190	62.3	69.9
245	05URN 088	L	4.9	84	42	6938	60.7	70.2
206	CHENIERE	L	5.6	86	37	6934	61.3	71.8
242	05URN 071	L	5.3	85	37	6711	61.0	71.3
243	05URN 082	L	6.1	86	34	5410	58.4	67.8

†L = Long grain and M = Medium grain.
‡Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

Table 7. Agronomic and milling performance of 12 anther culture-derived doubled haploid lines and selected check varieties in 2005 Uniform Regional Nursery, Crowley, LA.

Entry	RU #	Pedigree	Grain Type*	Vigor†	Days to 50% Heading	Plant Height (in)	Lodging (%)	Grain Yield (lb/A @ 12%)			Milling Yield (%)	
								Main	Ratoon	Total	Whole	Total
042	RU0402042	AC110DH2/AC108DH2	L	5	93	41		10258	958	11216	59.5	69.9
018	RU0202008	TRENASSE	L	5	85	43		9607	1103	10710	60.4	66.0
037	RU0202183	JUPITER	M	6	94	37		9460	1117	10577	66.1	71.2
011	RU0402011	61764DH3	M	5	89	43	13	9268	1260	10528	59.6	65.0
062	RU0402091	9863910DH2/AR 1053	L	4	93	43		9341	837	10179	58.5	69.3
094	RU0502094	CCDR/9770532DH2	L	5	91	40		9293	883	10176	63.1	68.7
080	WLLS	WELLS	L	4	96	42		8660	1370	10030	60.8	71.4
149	RU0502149	CCDR/9770532DH2	L	5	91	41		9240	564	9805	65.1	70.4
088	RU0502088	AC125DH2/AC4311DH2	L	5	94	45		9242	475	9717	62.1	69.7
128	RU0502128	AC425DH2/AC636DH1	L	5	91	43		8809	673	9482	64.5	70.7
059	PI606331	COCODRIE	L	5	92	40		9140	304	9444	61.1	69.2
091	RU0502091	AC110DH3/0043752	L	5	90	40		9044	332	9377	64.1	69.9
071	RU0402149	AC101DH2/AC102DH2	L	5	97	39		8338	899	9237	65.4	71.6
051	RU0402128	0043752/0047277	L	5	90	40	13	8772	269	9042	63.5	69.9
085	RU0502085	0047272/0046181	L	6	93	40		8235	613	8849	65.5	70.7
082	RU0402085	0043676/AC105DH3	L	6	93	39		7515	1299	8815	61.2	68.6
058	RU0002174	CHENIERE	L	6	95	37	10	7854	209	8062	66.0	72.4

*L = Long grain; M = Medium grain.

† Subjective rating 1 to 9, where 1 = excellent, 9 = poor.

RICE GENETICS AND GERMPLASM DEVELOPMENT

J.H. Oard, D.E. Groth, S.D. Linscombe, X.Y. Sha, E.P. Webster, N. Zhang, S. Kadaru, and W. Zhang

Summary

Research in 2005 produced the following results. 1. A long-term stewardship program was developed for Clearfield rice in Louisiana. This program has direct implications for sustainable management of the Clearfield-Newpath technology. 2. Rice proteins were identified that were produced in response to infection by the sheath blight fungus *Rhizoctonia solani*. DNA molecular markers, located inside or near the gene's coding for the rice proteins, were identified to facilitate marker-assisted selection of sheath blight resistance for Louisiana rice varieties. 3. Sheath blight-tolerant germplasm was developed by conventional methods that will be made available to the Rice Breeding Program. 4. New statistical methods to select DNA markers were developed/evaluated for improved marker-assisted selection in rice.

Objectives

The Rice Genetics Project, located at the LSU Agricultural Center, Department of Agronomy, was carried out under LAES Project 3295 in close cooperation with scientists at the Rice Research Station and the LSU Baton Rouge campus. The objectives of this project were to:

1) Develop long-term stewardship program for Clearfield rice in Louisiana.

2) Identify molecular markers for disease resistance and aroma in rice.

3) Develop sheath blight-tolerant germplasm with desirable agronomic traits.

4) Develop or identify superior methods of marker-assisted selection of elite Louisiana rice varieties.

Objective 1: Development of stewardship program for Clearfield rice in Louisiana

In cooperation with the Rice Research Station, a management strategy for long-term use of Clearfield rice varieties was developed. This plan was created out of necessity because hybridization or outcrossing between Clearfield rice and weedy red rice would have a direct impact on imazethapyr (Newpath) technology for rice weed control. Our research determined rates and agronomic consequences for outcrossing between Clearfield rice and red rice. Red rice populations showed extensive variation for plant height, panicle length, tillers/plant, seeds/plant, seed set, and grain weight. Outcrossing was detected from all Clearfield rice cultivars (CL121, CL141, CL161, and CLXL8) to red rice and was confirmed by phenotypic and DNA marker analyses. An overall outcrossing frequency of 0.17% was observed in 2002 red rice samples, with a range from 0 to 0.46%. Tolerance of 2002 red rice samples to imazethapyr corresponded to levels of acetohydroxy acid synthase (AHAS) activity. A majority (94%) of the progeny from the 2002 samples segregated 3 resistant:1 susceptible for tolerance to imazethapyr, indicating that a single dominant gene from Clearfield rice was associated with tolerance in the hybrid material. The remaining samples did not segregate for tolerance, suggesting that spontaneous mutations for tolerance may be present in this material before or after crossing with Clearfield rice. A 4-fold increase in an outcrossing frequency of 0.68% was observed in 2003 red rice samples with the highest outcrossing frequency for a single location at 3.2%. Outcrossing was also observed in 12 fields in 2005 with a history of planting Clearfield for two or more years at rates similar to those of previous years. Results from all of our risk assessment studies indicate that outcrossing between Clearfield and red rice will occur rapidly at rates that warrant the following management scheme: (1) Never plant Clearfield rice in the same field in two consecutive years; (2) Apply two sequential treatments of imazethapyr (Newpath) at recommended rates; (3) Physically remove red rice plants that escaped herbicide treatments; (4) Apply imazamox (Beyond) herbicide to red rice that escaped prior Newpath applications; (5) Apply different herbicides in the alternate year when Clearfield rice is not planted (e.g. Round Up Ready in soybeans); and (6) With no crop following Clearfield, plow fields to prevent red rice volunteers.

The three DNA microsatellite markers used in these studies were first identified by Dr. David Gealy, USDA, Stuttgart, AR. These markers correctly identified first-generation (F_1) hybrids between Clearfield and red rice biotypes collected in 2002 and 2003. As mentioned above, 12 sites in 2005 were evaluated that had been planted with Clearfield for two or more years to identify potential hybrids as a result of outcrossing in the F_2 or later generations. We also evaluated the microsatellite markers for their ability to distinguish between closely related hybrids involving Clearfield and the standard variety Cocodrie. To improve the monitoring of outcrossing between Clearfield rice and red rice, we recently developed "allele-specific SNP primers" for detection of the single base pair mutation at position Ser563 of the ALS gene in Clearfield 161 or in Clearfield 161-red rice hybrids that confer resistance to Newpath herbicide. Before these primers were developed, identification of closely related hybrids that may carry the mutation for Newpath resistance from CL161 was not always possible. The SNP primers have correctly identified to date all individuals, lines, varieties, or hybrids carrying one or two copies of the ALS Newpath resistance mutation originating from CL161.

Objective 2: Identification of molecular markers for disease resistance and aroma in rice

Sheath blight disease is a major constraint to high grain yield and milling quality for Louisiana producers. All of the leading varieties are susceptible to this disease, and fungicides are cost prohibitive in many cases. Recent studies in the laboratory have identified some 20 rice proteins that are upregulated 3- to 5-fold in response to challenge from the fungal pathogen *Rhizoctonia solani*. The most interesting proteins appear to be chitinase, glucanase, 3-β hydroxysteroid dehydrogenase (3-βHSD), glyceraldehyde phosphate dehydrogenase, 20S and 26S proteasome subunits, COP9-FUS5 protein, stromal ascorbate peroxidase, and RUBISCO. With the exception of 3-βHSD, these proteins have been found by others to be associated with resistance to stress and disease in humans and plants. Moreover, the proteins map to chromosomal regions previously identified to be associated with resistance to sheath blight and other diseases. 3-βHSD has not been previously identified and may represent a new component in defense response in rice. In addition, we have identified markers within or near the genes that code for these candidate defense proteins.

We are participating in the USDA-funded RiceCAP Project whose primary goal is to transfer DNA marker technology to U.S. rice breeding programs. In 2005, we evaluated a doubled-haploid (DH) population for sheath blight (SB2) derived from the parents Cocodrie and a sheath blight-resistant line, MCR10027, developed by Dr. Chuck Rush. A total of 325 DH lines from this population were inoculated in replicated plots with *Rhizoctonia solani* and scored for level of resistance using the 0-9 rating. We found a few lines from this population that showed good levels of resistance along with acceptable height and maturity that were comparable with the Cocodrie parent. The selected lines will be made available to the breeding program for further evaluation. Dr. Herry Utomo will screen the parents and SB2 lines in 2006 to identify a pool of DNA markers from which selected markers will be chosen for potential association with sheath blight resistance.

In addition to the SB2 population, a second population (MY1) for increased milling yield, consisting of 156 inbred lines, was evaluated for head rice, plant height, and maturity. Data from MY1 were collected and sent to the RiceCAP Project as part of a cooperative, multi-state effort to select DNA markers for high milling yield in U.S. rice. An additional population for milling yield (MY2) was advanced to the F_5 generation and will be evaluated in Louisiana, Arkansas, and Texas, along with MY1, during the 2006 field season. The final goal is to find markers that will help reduce the breeding time needed to increase milling yields for the next generation of Louisiana rice varieties.

Grain quality is an important economic consideration for Louisiana rice producers and millers. While grain yield has increased incrementally with new Louisiana varieties in the last decade, the milling quality has remained stagnant or has actually declined in some instances. Breeding for milling quality is difficult, time consuming, and labor intensive. We have recently identified seven candidate molecular markers from elite U.S. lines for enhanced milling quality. Two markers map within genes reported to be associated with rice milling quality. The new markers will be evaluated in two separate genetic populations in 2006 as part of the USDA RiceCAP project.

Fragrance or aroma is an important desirable trait for cooking quality of premium-value Jasmine and Basmati rice varieties, associated with the level of 2-acetyle-1-pyrroline controlled by the recessive locus *fgr* on Chromosome 8 that encodes for betaine aldehyde dehydrogenase (BAD2). We have designed and applied PCR-based SNP markers using rice genomic template DNA in Exon 7 of the BAD2 gene. The approach developed during this study represents a relative high-throughput, cost effective, reproducible, and facile protocol using a three-primer system that unequivocally distinguished alleles of the BAD2 gene among 22 rice fragrant and nonfragrant rice lines. Results to date suggest that our PCR-based method is an effective option to facilitate rapid marker-assisted screening of aromatic/nonaromatic homozygous and heterozygous genotypes for varietal improvement. Additional aroma germplasm will be evaluated using the SNP markers in 2006.

Objective 3: Develop sheath blight-tolerant germplasm with desirable agronomic traits

The primary goal of this project is to develop improved germplasm lines for sheath blight resistance from both wild and domesticated sources by crossing to high yielding Louisiana varieties. Toward this end, 175 new hybrid combinations were produced to incorporate new sources of resistance from Louisiana, Mississippi, and China. F_1 plants derived from more than 200 crosses made in 2004 were evaluated and advanced for next year's field trials. A total of 56 out of 1940 F_2 to F_5 lines were identified with high levels of sheath blight tolerance (sheath blight rating of 5 or less) and improved agronomic characteristics. This material will be made available to the LSU AgCenter Rice Breeding Program.

Objective 4: Develop superior methods of marker-assisted selection for enhancement of elite Louisiana rice varieties

Traditional quantitative trait loci (QTL) mapping techniques are commonly used to identify loci or intervals linked to traits of interest in controlled crosses, but power, precision, and reproducibility are often lacking when applied to real-world breeding populations. Association mapping may be more precise with additional savings in time and expense. We evaluated the potential of discriminant analysis (DA) for discovery of candidate microsatellite markers associated with 12 economically important traits in a large population of unrelated U.S. and Asian inbred lines of rice. Associated marker alleles detected by DA mapped within the same genetic intervals when compared with previous traditional QTL mapping experiments that evaluated progeny derived from various controlled crosses. With the same dataset, we also compared different modern regression approaches for selecting molecular markers associated with agronomic traits. These methods included stepwise forward regression (SFR), least angle regression (LAR), and LASSO (Least Absolute Shrinkage and Selection Operator) selection. To increase statistical power, an epistatic term to identify interacting loci was added to the three regression approaches. R^2 and cross validation data were also used as criteria for optimal selection of both additive and epistatic models. The results showed that epistatic loci were identified for the first time that increased power to select markers associated with agronomic traits. The results also indicated that the regression models were at least as effective, if not more in some cases, as the multivariate DA approach for predicting strength of association between microsatellite markers and complex agronomic traits among inbred lines of rice.

APPLICATION OF MARKER-ASSISTED BREEDING TO GENETIC IMPROVEMENT OF RICE[1]

H.S. Utomo, J.L. Nash, and S.D. Linscombe

Marker-assisted breeding (MAB) was conducted to pyramid major blast resistance Pi-ta[2] and Pi-z genes using a number of parental lines. Marker-assisted selection was conducted on field-grown materials following selection for desirable agronomic characters, greenhouse materials for rapid generation advancement, and anther culture materials to obtain doubled haploid lines carrying blast genes.

Field Study

About 6,000 rows of $F_{2:3}$ and 4,000 $F_{2:4}$ lines derived from 94 multi-way crosses were evaluated in the summer of 2005. About 8,500 plants from $F_{2:3}$ populations and 2,500 plants from $F_{2:4}$ populations were first selected based on their agronomic characteristics. A total of 1,378 plants were selected. A single panicle from each selected plant together with leaf tissue was harvested at maturity. DNA was extracted from the leaf tissues and used for marker analysis. Of these selected lines, 105 were found to carry markers for both genes and 1,273 carry one of the markers. These lines will be advanced in the next planting season.

Number of crosses	: 94
Generation	: F_3 and F_4
Number of head rows per cross	: 40-96
Total rows evaluated	: 5,760 F_3 and 2,556 F_4
Number of plants selected*	: 8,523 [*Phenotypic selection based on agronomic values other than blast resistant trait]
Lines selected based on marker data	: 1, 378 lines
Leaf Sampling	: The tip of rice leaf about 2 cm in length was placed in the 96 sample holder for marker analysis. The leaf samples were brought to the lab. DNA was either extracted immediately or at any day within a 1-week period.
Microsatellite markers used	: RM155, OSM89, RM7102 (*Pi-ta*[2]), RM527 (*Pi-z*)
DNA extraction	: Grinding method followed by heating at 93°C for 3 minutes. [Using a paper hole puncher, a tissue sample was cut and placed in the 96-well PCR plate. Three stainless steel beads were added into each microtube. A 40-µl TE1 buffer was added to each tube. The plate was covered with strip caps and ground for 1 minute using the Mini-BeadBeater-96 (BioSpec Products, Inc., OK). The plate was placed in the thermal cycler and programmed to 93°C for 3 minutes. After heating, a 160-µl TE2 buffer was added into each well and mixed. The crude DNA extracts were then ready for use in PCR reactions.]

[1] This research is supported in part by funding provided by rice producers through the Louisiana Rice Research Board.

PCR Reaction mix	: The PCR mix consisted of 3.13 µl of Sigma Jumpstart (Sigma, MO, USA; Cat. # P0982), 1.87 µl DNA extract, and 0.63 µl (0.1 µM) each of forward and reverse microsatellite primers.
PCR conditions	: PCR amplification was performed on a PTC 100 thermal cycler (MJ Research, Inc., MA, USA) using a 96-well plate, programmed to initial denaturation at 94°C for 4 min followed by 35 cycles of 45 sec at 94°C, 45 sec at 55°C, and 1 min at 72°C, with a final extension step of 1 min at 72°C for amplification. The PCR product was held at 4°C before analysis.
Electrophoresis	: PAG (Polyacrylamide Gel Electrophoresis)
Staining Method	: Ethidium bromide
Visualization	: UV light
Gel Recording	: KODAK EDAS 290

Greenhouse Study

The main objective of this approach is to develop parental lines carrying both blast-resistant genes through marker-assisted backcrossing and recurrent marker selection. The greenhouse conditions provide year-round activities, allowing rapid generation advancement. Cultivars 'Katy,' 'Kaybonnet,' and 'Drew' were used as a *Pi-ta*^{2} donor lines and 'Lafitte' and 'Jefferson' as a *Pi-z* donor lines. Currently, more that 40 parental lines from various genetic backgrounds are being advanced in the greenhouse.

Anther Culture

The anther culture approach provides production of purebred lines (doubled haploid) in one cycle of culture. Incorporation of anther culture into marker-assisted selection produces blast resistant homozygous lines. Hundreds of doubled haploid lines possessing blast-resistant genes have been obtained. These lines will be evaluated in the field for their agronomic traits.

METHOD FOR STREAMLINING MARKER-ASSISTED BREEDING[1]

H.S. Utomo, I. Wenefrida, J.L. Nash, and S.D. Linscombe

To fully reach its potential for breeding purposes, DNA marker, a laboratory-derived technique, has to evolve into a breeder-friendly tool. It has to be practical, high throughput, and economical. The whole operation of marker-assisted selection can be divided into three steps: sample collection, DNA extraction - PCR amplification, and marker detection. Each step has its own specific requirements that most conventional breeders may not be accustomed to since the steps are commonly laborious, must be handled with laboratory type-neatness, and involve expensive equipment. Breeders realize the benefit of this technology, but generating a reasonable number of marker data in a timely manner for genetic evaluation of populations and the cost associated with it remain a problem.

Simplification of each step and synchronizing the entire process, from taking leaf samples in the field to DNA extraction, PCR amplification, and marker detection into either a 96 or 384 format, will streamline marker-assisted selection. Synchronizing can reduce time for note taking or data recording during sample collection and minimize errors during PCR processing and marker analysis. Simplification of each step brings down supply cost. We have applied a simple method to streamline marker-assisted selection requiring three basic pieces of equipment, i.e. a bead-based grinder, PCR machine, and polyacrylamide gel (PAG) electrophoresis unit. Using this low-tech approach, a comparable number of marker data can be produced with a fraction of the cost. A modest up-front cost for the equipment of less than $15,000 may facilitate breeders who wish to incorporate marker technology into their programs but have limited budget or no access to automated facilities.

MATERIALS AND METHODS

Leaf Sampling

Leaf samples were collected from field-grown rice (*Oryza sativa* L.) at the Rice Research Station South Farm, Crowley, LA. Samples were collected while conducting phenotypic evaluation among segregating rows developed from a cross between Katy (parent carrying the *Pi-ta*^{2} gene) and the susceptible breeding line 04MB00871. The tip of the leaf about 2 cm in length from the plant showing desirable characteristics was snapped and inserted in the sample holder for marker analysis to determine if the plant carries blast resistance *Pi-ta*^{2} gene. The leaf sample holder was designed to correspond to the 96-well plate to facilitate easy processing. To keep leaf samples from falling out of the pockets, the holder was rolled and secured with a rubber band when full. The leaf samples were carried to the lab immediately or at the end of the work day for DNA extraction. Once brought to the lab, the samples were immediately processed or left on the table top and processed a later day.

DNA Extraction

Using a paper hole puncher, a sample was taken from each leaf cut inside a holder pocket and placed into the corresponding tube in the 96-well PCR plate. Three stainless-steel beads (BioSpec Product, OK; Cat. # 11079123ss) were added into each microtube. A 40-µl TE1 buffer was added to each tube. The plate was covered with strip caps and ground for 1 minute using the Mini-BeadBeater-96. The plate was placed in the thermal cycler and programmed to 93°C for 3 minutes. After heating, a 160-µl TE2 buffer was added into each well and mixed. The crude DNA extracts were then ready for use in PCR reactions. A typical volume of DNA extract used in the reactions was 1.87 µl. The unused portions of DNA samples were stored at -20° or -80°C.

Microsatellite Marker and PCR Reaction

Microsatellite markers for blast resistance genes (*Pi-ta*^{2}), i.e. RM155 and OSM89, were used to screen plants for the presence of the gene. To test the consistency of the overall method, 48 microsatellite markers distributed across the 12 rice chromosomes were used in PCR reactions with DNA extracts from three rice cultivars.

[1] This research is supported in part by the Louisiana Rice Research Board.

The PCR final volume of 6.25 µl was used. PCR amplification was performed on a PTC 100 thermal cycler using a 96-well plate, programmed to initial denaturation at 94°C for 4 minutes followed by 35 cycles of 45 seconds at 94°C, 45 seconds at 55°C, and 1 minute at 72°C, with a final extension step of 1 minute at 72°C for amplification. The PCR product was held at 4°C before analysis.

Electrophoresis and Band Scoring

PCR products were separated on a polyacrylamide gel in a Mega-Gel dual high-throughput vertical electrophoresis unit (C.B.S. Scientific, CA, USA). One hundred µl of 10 mg ml^{-1} ethidium bromide were added to the lower buffer reservoir before pre-running the gel. The PCR product of 6.25 µl volume was loaded into the well and run at 300 volts for 2 hours and 30 minutes. The resulting bands were visualized under a 254-nm UV light, and the band images were captured on the KODAK EDAS 290. Files containing band images were stored in the computer. The size of bands was determined using the KODAK EDAS 290 companion software.

RESULTS

Collecting Leaf Samples in the Field

The 96-leaf holder facilitated easy and fast sampling. Ninety-six leaf samples could be collected by one person in 1 hour. Five leaf holders, each containing 96 leaf samples, can be carried in a pocket. There was no need to use an ice chest. The sample could be brought to the lab immediately or wait till the end of the day when breeders were ready to go back to the lab. There was no difference in the quality of markers amplified from DNA samples extracted from the tissue samples brought to the lab immediately or at a later time. The quality of amplified products (microsatellite markers) from leaf samples left on the counter top for several days unfrozen was not significantly different from the ones processed immediately upon arrival. This flexibility gave a time window to allow lab personnel to coordinate, synchronize, and streamline marker analysis. This quick leaf sampling method may provide the speed needed to do field sampling.

Low Cost, High Throughput DNA Extraction

It took 1 minute to grind and 3 minutes for heating to produce DNA extracts ready for PCR. The speed of DNA extraction was faster than collecting leaf samples in the field. Using this method, one lab employee was able to conduct about 800 DNA extractions in a single day. The bead-based grinding method provided DNA extract of quantity adequate for PCR reaction. A volume of 1.87 µl was sufficient for use in PCR reaction. Therefore, 100 PCR reactions could be performed from one extraction. The average cost of DNA extraction per data point is about 1¢. Crude DNA extraction using this method is inexpensive and produced clear and reproducible marker bands in a non-labeled, gel-based apparatus. The unused portions of DNA extract can be stored at -20° or -80°C for 3 months.

PCR Reaction

A final volume of 6.25 µl for the PCR mix was sufficient to generate amplified products (markers) that were clearly detectable. PCR amplification was completed in 3 hours. Thus, two PCR amplifications can be done in a day, resulting in a total of 192 PCR products. The number of PCR products can be easily quadrupled to 768 a day by using a 384 PCR plate or a tetrad of 96 plates. Results from PCR amplification using random primers in 12 rice chromosomes were consistent and reproducible. Thus, this method can be used for genetic mapping purposes.

Marker Detection

The dual vertical electrophoresis unit accommodated 200 samples in each run. It took 2 to 3 hours to separate microsatellite marker bands. One person can run two units in tandem generating 400 marker data a day. Multiplexing of two or more markers can increase the number of data collected. The gels were reused four to six times in the 3-day period. When not used, the gels were wrapped with plastic wrap (Cling Wrap, Glad) and stored at room temperature (25°C). Any time the gels were reused, 20 µl of 10 mg ml^{-1} ethidium bromide were

added to each lower buffer before pre-running. Reusing the gels not only lowered the cost per data point but also saved time by bypassing the glass plate and gel preparation steps. With a single marker (not multiplex), the supply cost, including buffer, polyacrilamid gel, pipette tips, and size markers, was about 4¢ per data point. Simplification of each step facilitates streamlining marker-assisted selection into a process that is less complicated, faster, and economical. Synchronizing the whole process into the 96 or 354 format increases the speed and minimizes error.

Table 1. Method for streamlining marker-assisted breeding using microsatellite markers.

1. Quick and easy leaf sampling in the field using the 96 format leaf holder, plant labeling, and plant ID recording. Hundreds of samples collected a day, no need to use an ice chest.
2. Rapid DNA extraction using a bead-based grinder: 1 minute grinding and 3 minutes heating – 800 DNA extracts a day.
3. PCR amplification: 96 samples using the 96 single block or 384 samples using tetrad block PCR machine in less than 3 hours – 192 to 768 PCR products a day.
4. Low-cost gel electrophoresis – 400 marker data a day using two electrophoresis units.

Supply cost per data point: (single marker/non-multiplex)
DNA extraction: 1¢. PCR reaction: 29¢. Gel electrophoresis: 4¢. Total: 34¢.

Figure 1. Amplified PCR products generated using primers RM 272, 306, 128, and 224 with the DNA template from leaf tissue of three rice cultivars extracted immediately (EI), 6 hours after collected (6h), and after left on the lab table top for 3 days (3d). A final volume of 6.25 µl was used in PCR amplification and DNA fragments were separated on a 6% PAG electrophoresis gel in TBE buffer. The bright band on the 10-bp ladder represents a size of 100 bp fragments.

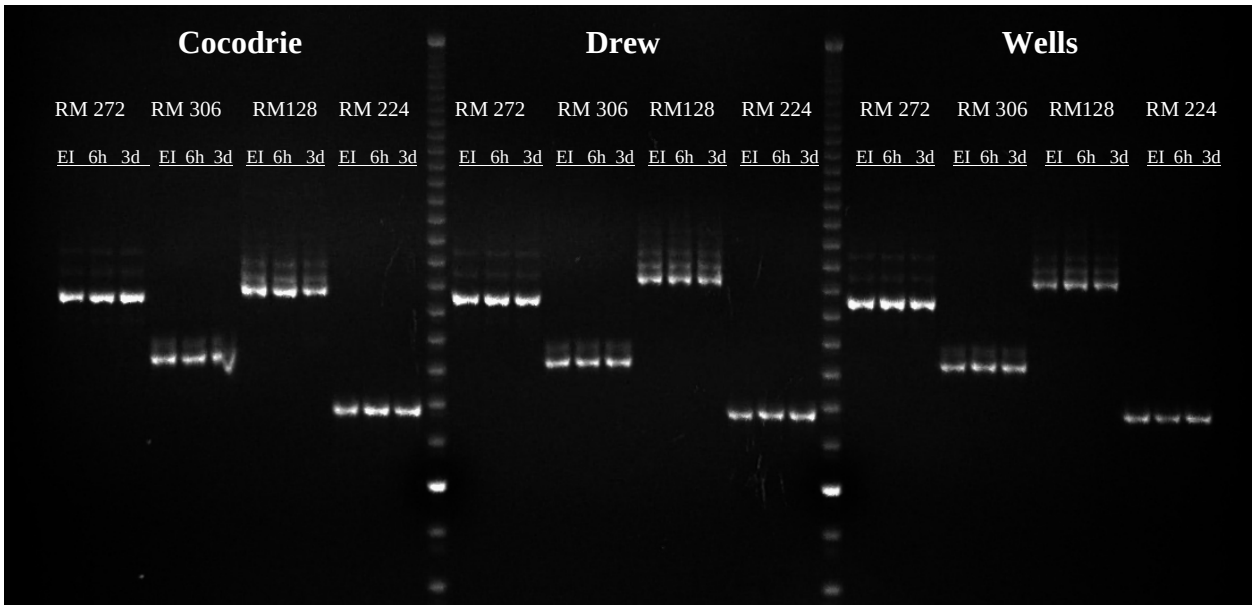


Figure 2. A typical result of marker analysis from an F_2 population derived from a cross between a blast-resistant parent carrying the *Pi-ta*^{2} gene (Kaybonnet) and a susceptible parent (03MB10025). A final volume of 6.25 µl was used in PCR amplification using microsatellite primer RM155. The DNA fragments were separated on a 6% PAG electrophoresis gel in a TBE buffer. Lanes 1 and 2, respectively, are susceptible parent (SP) and resistant parent (RP). Lanes 3 to 36 are the F_2 progeny lines (S=homozygouse susceptible, R=homozygous resistant, and H=heterozygous for loci RM155 linked to *Pi-ta*^{2} gene). The expected size of a blast marker allele is 269 bp, while a non-blast marker allele is 279 bp.

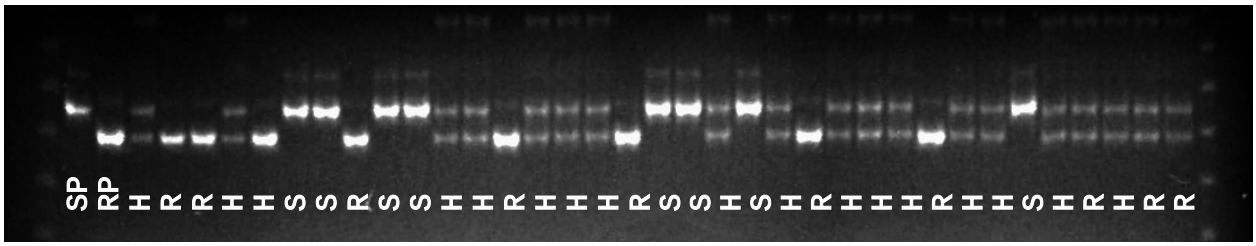
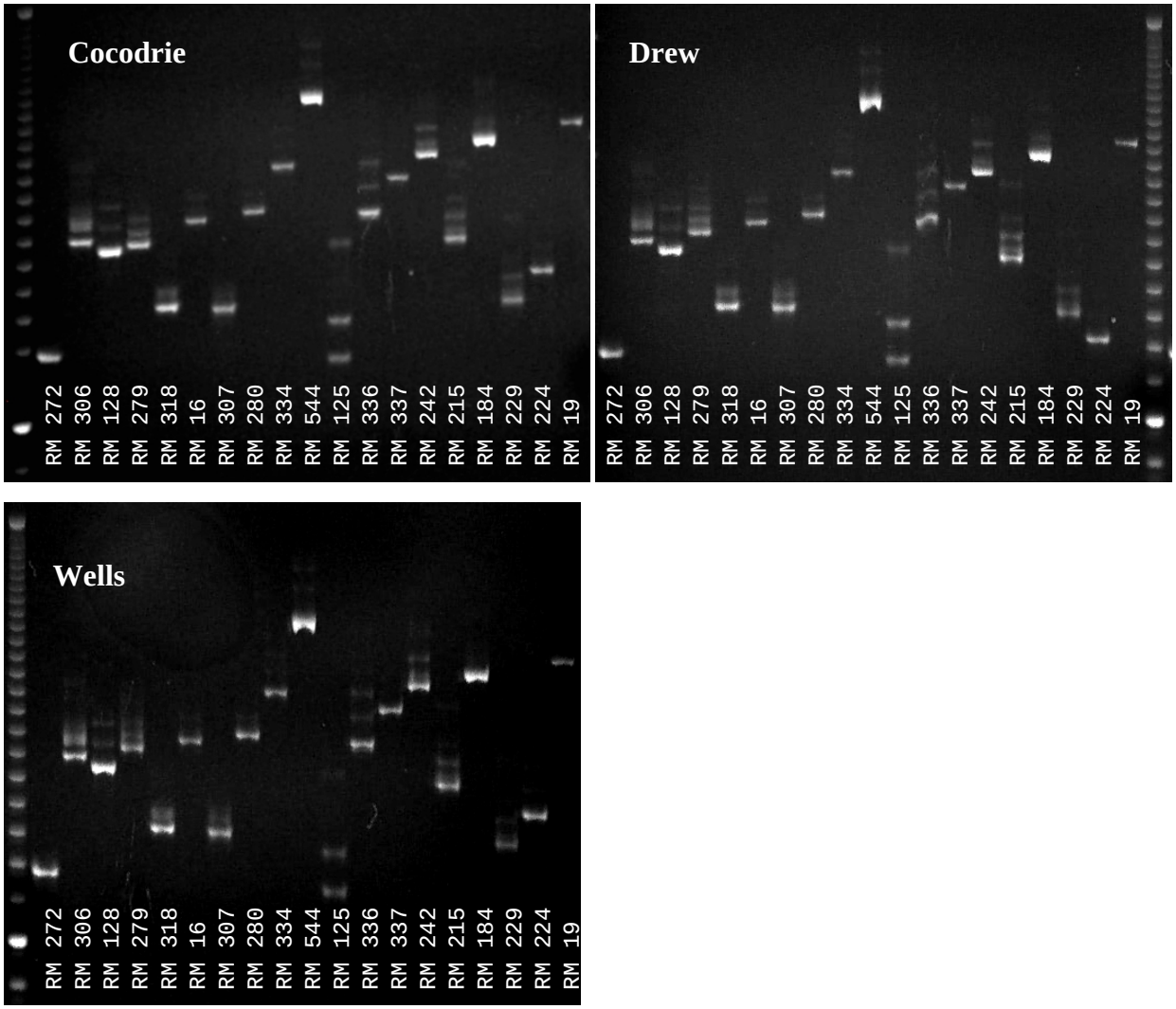


Figure 3. PCR amplification of various markers from 12 rice chromosomes using primers RM 272, 306, 128, 279, 318, 16, 307, 280, 334, 544, 125, 336, 337, 242, 215, 184, 229, 224, and 19 on three rice cultivars Cocodrie, Drew, and Wells. The bright band on the 10 bp ladder represents a size of 100 bp fragments.



MUTATION INDUCTION IN RICE – DEVELOPMENT OF HIGH-PROTEIN RICE

I. Wenefrida, H.S. Utomo, and S.D. Linscombe

Background and Objectives

Improved nutritional values, such as high-protein content, will benefit the U.S. rice industry by increasing competitive advantage against its competitors. Almost half of rice produced in the United States is exported, and long-grain rice is the most commonly grown and traded type of rice in the world. U.S. rice commands a premium in many export markets. Research for high-protein rice is ongoing. This added value to the already premium quality will secure its premium price. Since rice is an excellent source of complex carbohydrates, high-protein rice may become more appealing to the beer and cereal industry and, therefore, will create new domestic and international demand for U.S. rice.

Rice is the predominant staple food in many parts of Asia, the Pacific, North and South America, and Africa. It is a primary source of food for more than half of the world's population. Rice provides 35 to 75% of the calories for more than 3 billion people. In addition to being a rich source of dietary calories, rice is a good source of thiamine, riboflavin, and niacin. Typical protein content of rice is 6 to 8%. Its amino acid profile indicates that rice is high in glutamic and aspartic acid, but it is low in lysine. Lysine is an essential amino acid, and it is the limiting factor in a nutritional value of amino acids in rice. According to the WHO protein figures, the daily protein need is 56 g for a 75-kg man and 48 g for a 64-kg woman. In many parts of Asia, the contribution of rice to protein in the diet ranges from 50 to 70%. In these particular regions, a source of protein is often scarce or expensive. Thus, improving lysine and/or total protein content will bring important implications to the health of a great portion of the world's population.

The objectives of the project are to determine the total crude protein content among high-protein lines recovered, conduct field evaluation on these lines, select the most promising lines, and conduct seed increase for the selected lines in the winter nursery.

Progress

High-protein lines have been developed using six cultivars (Cypress, Cocodrie, Francis, Wells, indica IR64, and japonica Nipponbare). A total of 612 lines were planted on the South Farm this summer with a seeding rate of approximately 50 seeds per a 6-foot row. Nitrogen fertilization followed the recommended rate. Herbicides and pesticides were used as needed to control weeds and diseases. A flood was maintained on the rice field during the growing season with occasional drains for maintenance and weed control purposes. About 200 lines exhibited partial sterility, ranging from mild to severe. The remaining lines, however, were fertile with grain appearance and grain production comparable with their respective original parental lines from which they were derived. A sample of panicles from an individual plant has been collected and will be used in total protein content analysis and amino acid profiling.

Preliminary tests on the total protein content on limited number of entries are very encouraging. A number of lines showed significant improvement on their total protein content. Analysis on total protein content has been conducted on 163 entries (30 entries derived from Francis, 45 from Wells, 23 from Cypress, 20 from Cocodrie, 10 from the IR64, and 35 from Nipponbare). Results from the analysis of their total crude protein contents indicated that 129 lines showed significant improvement on their total protein content, ranging from 5 to 99% increase. Total crude protein content for the remaining 449 lines is being analyzed. Some of the most promising lines were found to be 100% fertile with no apparent differences compared with their original cultivars. Additional tests will be performed to verify the results from the preliminary tests. Based on protein data, eight high-protein lines were selected and grown in the Puerto Rico winter nursery during the fall of 2005.

High-protein rice will directly benefit the whole industry, from farmers to exporters. Improved nutritional quality of rice will strengthen the competitive value of U.S. rice. Since rice is a staple food for more than 3 billion people, high-protein/lysine rice not only will benefit rice industry economically but also bring positive implications to the health of a great portion of the world's population. Rice is an excellent source of complex carbohydrates; therefore, high-protein rice may become more appealing to the beer and cereal industry and, therefore, will create new domestic and international demands for U.S. rice.

RICE AGRONOMY[1]

J.A. Bond, J.P. Leonards, R.P. Regan, and D.M. Walker

INTRODUCTION

The following two sections of this report document research conducted in rice plant nutrition and cultural management. Rice plant nutrition experiments were conducted at the Rice Research Station and in on-farm experiments conducted in Morehouse, Richland, and Vermilion parishes. Cultural management studies were conducted at the Rice Research Station and the on-farm location in Morehouse Parish.

We express our sincere appreciation to the following off-station cooperators for their assistance in conducting this research. Our efforts would not be successful without their support:

Lounsberry Farms - Vermilion Parish
Zaunbrecher Farm and Roland Crymes - Morehouse Parish
Woodsland Plantation- Morgan Smith, Todd Bridges, and Des Woods - Richland Parish

Crop protection chemicals and formulations used in agronomic research at the Rice Research Station in 2005.

Trade name	Common name	Formulation	Company
Herbicides			
Arrosolo	Propanil + molinate	3 lb + 3 lb	RiceCo
Basagran	Bentazon	4 lb	BASF
Clincher	Cyhalofop	2.38 lb	Dow Agro Science LLC
Command	Clomazone	3ME	FMC Corp.
Duet	Propanil + bensulfuron	4 lb + 0.48 oz	RiceCo
Grandstand R	Triclopyr	3 lb	Dow Agro Science LLC
Londax	Bensulfuron	60% DF	DuPont
Newpath	Imazethapyr	2 lb	BASF
Permit	Halosulfuron	75% WSG	Monsanto
Regiment	Bispyribac-sodium	80% DF	Valent USA
Roundup Weathermax	Glyphosate	4 lb	Monsanto
Stam M4	Propanil	4 lb	Dow Agro Science LLC
Weedar 64	2,4-D	3.8 lb	Aventis
Insecticides			
Icon	Fipronil	6.2 FS	Aventis
Karate Z	Cyhalothrin	2.08 lb	Syngenta
Mustang Max	Zeta-cypermethrin	0.8	FMC Corp.
Fungicides			
Dithane DF	Mancozeb	75% DF	Dow Agro Science LLC
Quadris	Azoxystrobin	2.08 lb	Syngenta

[1] This research supported in part by funds provided by rice producers through the Louisiana Rice Research Board.

Common Abbreviations Used in Agronomic Research at the Rice Research Station

A	Acre
Ca	Calcium
COC	Crop oil concentrate
DAT	Days after treatment
DPP	Days prior to planting
Fe	Iron
ft	Feet
gal/A	Gallons product per acre
Head Rice	Percent of unbroken kernels left after milling
in	Inches
lb	Pounds
lb/A	Pounds product per acre
lb ai/A	Pounds active ingredient per acre
Ldg-Rate	Lodging rate in percent
Ldg-Type	Lodging type on a scale of 1 to 5 where 1 = slightly leaning and 5 = complete
K	Potassium
Main	Main-crop growth stage prior to harvest
Mg	Magnesium
Midseason	Midseason N applied during the panicle differentiation growth stage
Na	Sodium
NA	Information not available/applicable
oz/A	Ounces product per acre
P	Phosphorus
PD	Panicle differentiation
PI	Panicle initiation
pl/sq m	Plant densities measured 14 days after seedling emergence by counting the main-stem numbers in a randomly selected area of 1 m^2 in each plot
Postharvest	N applied immediately following main-crop harvest
ppm	Parts per million
PRE	Application prior to crop emergence
Preflood	Preflood N applied 1 to 2 days prior to permanent flood establishment
Preplant	Preplant N applied prior to flooding and seeding
pt/A	Pints product per acre
qt/A	Quarts product per acre
Ratoon	Ratoon-crop growth after harvest of main crop
RRS	Rice Research Station, Crowley, LA
SB Severity	Sheath blight infestation on a scale of 1 to 9 where 1 = no sheath blight and 9 = severe sheath blight infestation
Total Mill	Percent of rice kernels left after milling
Zn	Zinc
5% heading	N application when 5% of plants showed visible panicles
50% Head	Number of days from effective seeding date to 50% panicle exertion

RICE NUTRITION EXPERIMENTS

J.A. Bond, J.P. Leonards, R.P. Regan, and D.M. Walker

Variety/Hybrid by Nitrogen Rate and Application Timing Experiments

Variety and/or hybrid by nitrogen (N) rate and application timing experiments are conducted throughout Louisiana each year to establish the N requirements for new commercial varieties, advanced experimental lines, and hybrids. The N requirement, plant height, days to 50% heading, lodging susceptibility, and grain yield (including ratoon crop in southwest Louisiana) are determined. Rice varieties and hybrids may differ in their response to the amount and timing of applied N. Optimum yields of many varieties may occur over a wide range of N rates, depending on factors such as lodging, disease susceptibility, and inherent N utilization efficiency. Environmental influences, such as soil type, growing conditions, pest pressure, and weather, may influence varietal performance. Conducting field research in the major rice-producing areas of Louisiana provides valuable information for developing fertilization and management strategies for new varieties.

In 2005, seven varieties and eight commercial/experimental hybrids were tested in N rate and application timing experiments at the Rice Research Station and at on-farm sites in Richland and Vermilion parishes. Varieties included medium- and long-grain rice varieties, as well as conventional and herbicide-tolerant varieties. The ratoon response of selected varieties and hybrids was also evaluated in variety/hybrid by N rate and application timing experiments in which various rates of N were applied immediately following main-crop harvest.

Varieties evaluated included Cheniere, CL131, Trenasse, Jupiter, Banks, Cybonnet, and Medark. All varieties produced good to excellent yields at all three locations of the drill-seeded N rate by application timing experiments. Main-crop grain yields were very high at the Vermilion Parish location, and main-crop yields were equivalent regardless of N treatment for each variety. At the Richland Parish location, only Jupiter and Banks responded to N treatments. Optimum rice yields were achieved for Jupiter and Banks following 150 and 120 lb N/A applied preflood, respectively, at Richland Parish. Varieties responded differently to N treatments at the Rice Research Station. However, 150 lb N/A as a preflood application generally produced the highest grain yields for each variety.

Varieties were also evaluated for their response to midseason N application of 0, 30, or 60 lb N/A applied at the panicle differentiation growth stage. The response to midseason N was extremely inconsistent across varieties and locations. Data from 2005 demonstrates that main-crop grain yield potential of new varieties is still dependant on preflood N applications.

In a water-seeded cultural system, the optimum preflood N rate for Cheniere, CL131, and Trenasse was determined to be 150 lb N/A in 2005. Furthermore, main-crop grain yields of these varieties were improved when 60 lb N/A was applied at panicle differentiation.

At the Rice Research Station, main-crop grain yields of eight commercial/experimental hybrids were optimized following preflood N application at 120 lb N/A. Main-crop grain yields of XP723, CL XP730, XP728, and XP731 responded to an additional 60 lb N/A applied during the late-boot growth stage. At the Richland Parish location, yields of XP723, XP721, and XP729 were optimized following preflood N application at 120 lb N/A. No differences in yield were detected following N application for the other hybrids tested. No hybrids responded to N applied during the late-boot growth stage at Richland Parish. At both locations, the highest yield for all hybrids were achieved following application of N at 120 lb N/A preflood followed by 30 lb N/A at panicle differentiation.

Ratoon N fertilization experiments were continued at the Rice Research Station. One experiment was conducted with conventional varieties (Cocodrie and Trenasse), and the second was conducted with rice hybrids (XP723 and XP721). The experiment with conventional varieties was compromised because of damage from Hurricane Rita during ratoon-crop development. Ratoon yields of hybrids was optimized when N was applied at 90 lb/A.

Nitrogen Source and/or Application Timing Experiments

Experiments were conducted in 2005 to determine the rice response to different N sources applied preflood and midseason at panicle differentiation. Nitrogen sources included conventional urea (46-0-0), ammonium sulfate (21-0-0), and a blend of conventional urea and ammonium sulfate (33-0-0). Application timings included 150 lb N/A applied in a single preflood application or in a split application at preflood and panicle differentiation. Days to 50% heading, plant height, and grain yield were determined. Main-crop grain yields following conventional urea and the urea/ammonium sulfate blend were equivalent (approximately 9,000 lb/A), and main-crop grain yields following both of these treatments were higher than when ammonium sulfate was the N source. Yields were not improved with any N source when split applications were used.

Agrotain was evaluated in drill-seeded rice with emphasis on application timing. A total of 150 lb N/A was applied as urea or as Agrotain-treated urea at application timings including 15, 10, 5, and 0 days preflood. Days to 50% heading, plant height, and grain yield were determined. Using Agrotain-treated urea did not improve grain yields. Only application timings significantly influenced grain yield, and yields were optimized when N was applied 5 or 0 days preflood.

Miscellaneous Rice Nutrition Experiments

Applications of calcium chloride (N-Cal) were evaluated on drill-seeded Cocodrie rice. N-Cal was applied at 5, 10, 15, and 20 gal/A. Days to 50% heading, plant height, sheath blight severity, main-crop grain yields, and calcium content were determined. N-Cal had no effect on the agronomic parameters measured, and sheath blight infestations were severe regardless of N-Cal rate or application timing.

Rice Variety Nitrogen Validation Experiments at the Rice Research Station

Experiment number ..... : 05-CM-01 to 05-CM-07

Site and design ..... :
- **Location/Cooperator** ..... : Rice Research Station
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** ..... : 4
- **Plot size** ..... : 7 x 20 ft
- **Row width/rows per plot** ..... : 7 in / 12

Soil type ..... : Crowley silt loam
- **% organic matter** ..... : 1.58
- **pH** ..... : 6.6
- **Extractable nutrients** ..... : P-51; K-158; Na-122; Ca-1259; Mg-238; Zn-3.9; Fe-72 ppm

Crop/Variety ..... : Rice / Multiple (Seed data sheet)
- **Planting method/date** ..... : Drill seeded / March 29
- **Seeding rate/depth** ..... : 40 seed/ft^2/ 1 in
- **Emergence date** ..... : April 9
- **Harvest date** ..... : August 11

Fertilization ..... : 275 lb/A 0-24-24, March 29; 200 lb/A 46-0-0 postharvest, August 12

Water management ..... :
- **Flush** ..... : April 8, 18, 28, May 6
- **Flood** ..... : May 16; ratoon flood, August 15
- **Drain** ..... : July 29; ratoon drain, October 20

Pest management ..... :
- **Herbicides** ..... : 0.75 oz/A Permit + 4 qt/A Stam, April 21; 15 oz/A Clincher + 1 qt/A COC, April 27; 15 oz/A Clincher + 1 oz/A Londax + 1 qt/A COC, May 13; 1 qt/A Basagran + 1 qt/A COC, June 1; 1 oz/A Permit + 1.3 oz/A Londax, June 14
- **Insecticides** ..... : 1 oz/A Icon, March 28; 2 oz/A Karate, May 25; 4 oz/A Mustang Max, July 15
- **Fungicides** ..... : None

LSU AgCenter
Rice Research Station
Cheniere Nitrogen Validation 4.1

Trial ID: 05-CM-01
Location: Rice Research Station

Crop Name							Rice	Rice	Rice
Rating Date								1-Aug-2005	11-Aug-2005
Rating Data Type							50% Head	Height	Yield
Rating Unit							days	inches	lb/A
Crop Stage							Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	Urea	46	GR	90	LB AI/A	Preflood	89	30	6667
1	Urea	46	GR	0	LB AI/A	Midseason			
2	Urea	46	GR	90	LB AI/A	Preflood	91	31	6700
2	Urea	46	GR	30	LB AI/A	Midseason			
3	Urea	46	GR	90	LB AI/A	Preflood	89	30	7184
3	Urea	46	GR	60	LB AI/A	Midseason			
4	Urea	46	GR	120	LB AI/A	Preflood	90	31	7920
4	Urea	46	GR	0	LB AI/A	Midseason			
5	Urea	46	GR	120	LB AI/A	Preflood	90	31	7376
5	Urea	46	GR	30	LB AI/A	Midseason			
6	Urea	46	GR	120	LB AI/A	Preflood	91	31	7709
6	Urea	46	GR	60	LB AI/A	Midseason			
7	Urea	46	GR	150	LB AI/A	Preflood	90	32	8039
7	Urea	46	GR	0	LB AI/A	Midseason			
8	Urea	46	GR	150	LB AI/A	Preflood	90	31	8247
8	Urea	46	GR	30	LB AI/A	Midseason			
9	Urea	46	GR	150	LB AI/A	Preflood	90	31	8772
9	Urea	46	GR	60	LB AI/A	Midseason			
10	Urea	46	GR	180	LB AI/A	Preflood	92	32	8336
10	Urea	46	GR	0	LB AI/A	Midseason			
11	Urea	46	GR	180	LB AI/A	Preflood	91	34	8654
11	Urea	46	GR	30	LB AI/A	Midseason			
12	Urea	46	GR	180	LB AI/A	Preflood	91	32	8725
12	Urea	46	GR	60	LB AI/A	Midseason			
LSD (P=.05)							1.8	1.8	598.3
Standard Deviation							1.2	1.1	414.3
CV							1.38	3.35	5.27
Replicate F							5.956	0.780	4.596
Replicate Prob(F)							0.0023	0.4705	0.0085
Treatment F							1.576	3.176	12.933
Treatment Prob(F)							0.1523	0.0101	0.0001

LSU AgCenter
Rice Research Station
CL131 Nitrogen Validation 1.1

Trial ID: 05-CM-02
Location: Rice Research Station

Crop Name							Rice	Rice	Rice	Rice	Rice
Rating Date								1-Aug-2005	11-Aug-2005	7-Nov-2005	
Rating Data Type							50% Head	Height	Yield	Yield	Yield
Rating Unit							days	inches	lb/A	lb/A	lb/A
Crop Stage							Main	Main	Main	Ratoon	Total
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
1	Urea	46	GR	90	LB AI/A	Preflood	88	27	7344	994	8338
1	Urea	46	GR	0	LB AI/A	Midseason					
2	Urea	46	GR	90	LB AI/A	Preflood	88	27	7585	1351	8936
2	Urea	46	GR	30	LB AI/A	Midseason					
3	Urea	46	GR	90	LB AI/A	Preflood	88	28	7810	1141	9160
3	Urea	46	GR	60	LB AI/A	Midseason					
4	Urea	46	GR	120	LB AI/A	Preflood	88	28	8453	1325	9778
4	Urea	46	GR	0	LB AI/A	Midseason					
5	Urea	46	GR	120	LB AI/A	Preflood	88	29	8587	981	9568
5	Urea	46	GR	30	LB AI/A	Midseason					
6	Urea	46	GR	120	LB AI/A	Preflood	88	29	8810	1137	9947
6	Urea	46	GR	60	LB AI/A	Midseason					
7	Urea	46	GR	150	LB AI/A	Preflood	88	29	8623	882	9627
7	Urea	46	GR	0	LB AI/A	Midseason					
8	Urea	46	GR	150	LB AI/A	Preflood	88	30	9068	1184	10253
8	Urea	46	GR	30	LB AI/A	Midseason					
9	Urea	46	GR	150	LB AI/A	Preflood	89	29	8955	1002	9958
9	Urea	46	GR	60	LB AI/A	Midseason					
10	Urea	46	GR	180	LB AI/A	Preflood	89	30	9113	1093	10205
10	Urea	46	GR	0	LB AI/A	Midseason					
11	Urea	46	GR	180	LB AI/A	Preflood	90	30	8890	1062	9952
11	Urea	46	GR	30	LB AI/A	Midseason					
12	Urea	46	GR	180	LB AI/A	Preflood	90	31	9130	1093	10222
12	Urea	46	GR	60	LB AI/A	Midseason					
LSD (P=.05)							0.6	1.0	552.7	260.2	658.6
Standard Deviation							0.4	0.6	382.8	180.2	456.1
CV							0.49	2.06	4.49	16.33	4.72
Replicate F							1.000	2.200	15.303	5.787	10.391
Replicate Prob(F)							0.4051	0.1346	0.0001	0.0029	0.0001
Treatment F							12.152	12.936	10.462	2.326	6.583
Treatment Prob(F)							0.0001	0.0001	0.0001	0.0319	0.0001

LSU AgCenter
Rice Research Station
Trenasse Nitrogen Validation 2.1

Trial ID: 05-CM-03
Location: Rice Research Station

Crop Name							Rice	Rice	Rice	Rice	Rice
Rating Date								1-Aug-2005	11-Aug-2005	7-Nov-2005	
Rating Data Type							50% Head	Height	Yield	Yield	Yield
Rating Unit							days	inches	lb/A	lb/A	lb/A
Crop Stage							Main	Main	Main	Ratoon	Total
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
1	Urea	46	GR	90	LB AI/A	Preflood	81	32	8388	1112	9500
1	Urea	46	GR	0	LB AI/A	Midseason					
2	Urea	46	GR	90	LB AI/A	Preflood	81	32	9036	1116	10152
2	Urea	46	GR	30	LB AI/A	Midseason					
3	Urea	46	GR	90	LB AI/A	Preflood	81	33	9381	937	10318
3	Urea	46	GR	60	LB AI/A	Midseason					
4	Urea	46	GR	120	LB AI/A	Preflood	82	33	9334	1123	10457
4	Urea	46	GR	0	LB AI/A	Midseason					
5	Urea	46	GR	120	LB AI/A	Preflood	82	33	9720	974	10694
5	Urea	46	GR	30	LB AI/A	Midseason					
6	Urea	46	GR	120	LB AI/A	Preflood	82	34	10158	918	11076
6	Urea	46	GR	60	LB AI/A	Midseason					
7	Urea	46	GR	150	LB AI/A	Preflood	83	34	10032	880	10912
7	Urea	46	GR	0	LB AI/A	Midseason					
8	Urea	46	GR	150	LB AI/A	Preflood	82	34	10163	900	11063
8	Urea	46	GR	30	LB AI/A	Midseason					
9	Urea	46	GR	150	LB AI/A	Preflood	83	34	9916	857	11043
9	Urea	46	GR	60	LB AI/A	Midseason					
10	Urea	46	GR	180	LB AI/A	Preflood	83	35	10273	944	11427
10	Urea	46	GR	0	LB AI/A	Midseason					
11	Urea	46	GR	180	LB AI/A	Preflood	83	35	10250	844	11366
11	Urea	46	GR	30	LB AI/A	Midseason					
12	Urea	46	GR	180	LB AI/A	Preflood	83	35	10783	1014	11886
12	Urea	46	GR	60	LB AI/A	Midseason					
LSD (P=.05)							1.3	1.5	495.1	212.3	768.2
Standard Deviation							0.9	0.9	342.9	146.6	530.5
CV							1.07	2.62	3.5	15.14	4.9
Replicate F							8.843	1.118	17.296	3.815	5.680
Replicate Prob(F)							0.0002	0.3448	0.0001	0.0207	0.0036
Treatment F							3.255	4.757	14.517	1.912	5.911
Treatment Prob(F)							0.0042	0.0009	0.0001	0.0814	0.0001

LSU AgCenter
Rice Research Station
Jupiter Nitrogen Validation 2.1

Trial ID: 05-CM-04
Location: Rice Research Station

Crop Name							Rice	Rice	Rice	Rice	Rice
Rating Date								1-Aug-2005	11-Aug-2005	7-Nov-2005	
Rating Data Type							50% Head	Height	Yield	Yield	Yield
Rating Unit							days	inches	lb/A	lb/A	lb/A
Crop Stage							Main	Main	Main	Ratoon	Total
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
1	Urea	46	GR	90	LB AI/A	Preflood	90	32	6768	1278	8046
1	Urea	46	GR	0	LB AI/A	Midseason					
2	Urea	46	GR	90	LB AI/A	Preflood	90	31	7114	1379	8493
2	Urea	46	GR	30	LB AI/A	Midseason					
3	Urea	46	GR	90	LB AI/A	Preflood	90	32	7421	1238	8659
3	Urea	46	GR	60	LB AI/A	Midseason					
4	Urea	46	GR	120	LB AI/A	Preflood	90	31	7734	1445	9179
4	Urea	46	GR	0	LB AI/A	Midseason					
5	Urea	46	GR	120	LB AI/A	Preflood	91	32	7984	1376	9360
5	Urea	46	GR	30	LB AI/A	Midseason					
6	Urea	46	GR	120	LB AI/A	Preflood	90	33	8640	1464	10104
6	Urea	46	GR	60	LB AI/A	Midseason					
7	Urea	46	GR	150	LB AI/A	Preflood	90	34	8620	1202	9822
7	Urea	46	GR	0	LB AI/A	Midseason					
8	Urea	46	GR	150	LB AI/A	Preflood	91	33	8635	1397	10032
8	Urea	46	GR	30	LB AI/A	Midseason					
9	Urea	46	GR	150	LB AI/A	Preflood	91	35	9023	1417	10440
9	Urea	46	GR	60	LB AI/A	Midseason					
10	Urea	46	GR	180	LB AI/A	Preflood	91	34	9164	1400	10564
10	Urea	46	GR	0	LB AI/A	Midseason					
11	Urea	46	GR	180	LB AI/A	Preflood	91	35	9515	1468	10983
11	Urea	46	GR	30	LB AI/A	Midseason					
12	Urea	46	GR	180	LB AI/A	Preflood	91	35	9038	1375	10413
12	Urea	46	GR	60	LB AI/A	Midseason					
LSD (P=.05)							0.8	1.4	667.8	242.2	701.7
Standard Deviation							0.5	0.8	462.5	167.8	486.0
CV							0.58	2.54	5.57	12.25	5.02
Replicate F							7.505	0.274	20.375	1.604	17.825
Replicate Prob(F)							0.0006	0.7629	0.0001	0.2071	0.0001
Treatment F							2.327	10.278	14.565	1.064	14.465
Treatment Prob(F)							0.0301	0.0001	0.0001	0.4178	0.0001

LSU AgCenter
Rice Research Station
Banks Nitrogen Validation 3.1

Trial ID: 05-CM-05
Location: Rice Research Station

Crop Name							Rice	Rice	Rice	Rice	Rice
Rating Date								1-Aug-2005	11-Aug-2005	7-Nov-2005	
Rating Data Type							50% Head	Height	Yield	Yield	Yield
Rating Unit							days	inches	lb/A	lb/A	lb/A
Crop Stage							Main	Main	Main	Ratoon	Total
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
1	Urea	46	GR	90	LB AI/A	Preflood	93	37	5543	1132	6675
1	Urea	46	GR	0	LB AI/A	Midseason					
2	Urea	46	GR	90	LB AI/A	Preflood	93	36	6323	1171	7494
2	Urea	46	GR	30	LB AI/A	Midseason					
3	Urea	46	GR	90	LB AI/A	Preflood	94	38	6114	1035	7148
3	Urea	46	GR	60	LB AI/A	Midseason					
4	Urea	46	GR	120	LB AI/A	Preflood	94	39	7281	1343	8624
4	Urea	46	GR	0	LB AI/A	Midseason					
5	Urea	46	GR	120	LB AI/A	Preflood	94	39	7279	1319	8598
5	Urea	46	GR	30	LB AI/A	Midseason					
6	Urea	46	GR	120	LB AI/A	Preflood	94	41	7646	1351	8997
6	Urea	46	GR	60	LB AI/A	Midseason					
7	Urea	46	GR	150	LB AI/A	Preflood	95	40	6800	1067	7867
7	Urea	46	GR	0	LB AI/A	Midseason					
8	Urea	46	GR	150	LB AI/A	Preflood	95	41	7946	1247	9193
8	Urea	46	GR	30	LB AI/A	Midseason					
9	Urea	46	GR	150	LB AI/A	Preflood	96	41	7633	1468	9101
9	Urea	46	GR	60	LB AI/A	Midseason					
10	Urea	46	GR	180	LB AI/A	Preflood	96	41	7719	1611	9330
10	Urea	46	GR	0	LB AI/A	Midseason					
11	Urea	46	GR	180	LB AI/A	Preflood	96	41	7114	1502	8616
11	Urea	46	GR	30	LB AI/A	Midseason					
12	Urea	46	GR	180	LB AI/A	Preflood	96	41	7698	1506	9204
12	Urea	46	GR	60	LB AI/A	Midseason					
LSD (P=.05)							1.5	2.0	745.1	235.3	723.4
Standard Deviation							1.1	1.2	516.0	162.9	501.0
CV							1.13	3.03	7.28	12.41	5.96
Replicate F							4.681	3.667	12.211	9.967	20.163
Replicate Prob(F)							0.0078	0.0422	0.0001	0.0001	0.0001
Treatment F							5.038	6.667	8.456	5.258	12.708
Treatment Prob(F)							0.0001	0.0001	0.0001	0.0001	0.0001

LSU AgCenter
Rice Research Station
Cybonnet Nitrogen Validation 3.1

Trial ID: 05-CM-06
Location: Rice Research Station

Crop Name							Rice	Rice	Rice
Rating Date								1-Aug-2005	11-Aug-2005
Rating Data Type							50% Head	Height	Yield
Rating Unit							days	inches	lb/A
Crop Stage							Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	Urea	46	GR	90	LB AI/A	Preflood	90	32	5482
1	Urea	46	GR	0	LB AI/A	Midseason			
2	Urea	46	GR	90	LB AI/A	Preflood	90	31	6007
2	Urea	46	GR	30	LB AI/A	Midseason			
3	Urea	46	GR	90	LB AI/A	Preflood	90	32	6608
3	Urea	46	GR	60	LB AI/A	Midseason			
4	Urea	46	GR	120	LB AI/A	Preflood	90	33	6671
4	Urea	46	GR	0	LB AI/A	Midseason			
5	Urea	46	GR	120	LB AI/A	Preflood	90	33	7403
5	Urea	46	GR	30	LB AI/A	Midseason			
6	Urea	46	GR	120	LB AI/A	Preflood	90	34	7586
6	Urea	46	GR	60	LB AI/A	Midseason			
7	Urea	46	GR	150	LB AI/A	Preflood	91	33	7291
7	Urea	46	GR	0	LB AI/A	Midseason			
8	Urea	46	GR	150	LB AI/A	Preflood	91	34	7471
8	Urea	46	GR	30	LB AI/A	Midseason			
9	Urea	46	GR	150	LB AI/A	Preflood	90	34	7955
9	Urea	46	GR	60	LB AI/A	Midseason			
10	Urea	46	GR	180	LB AI/A	Preflood	91	35	7880
10	Urea	46	GR	0	LB AI/A	Midseason			
11	Urea	46	GR	180	LB AI/A	Preflood	92	35	8065
11	Urea	46	GR	30	LB AI/A	Midseason			
12	Urea	46	GR	180	LB AI/A	Preflood	92	35	7935
12	Urea	46	GR	60	LB AI/A	Midseason			
LSD (P=.05)							1.2	1.7	675.7
Standard Deviation							0.8	1.0	468.0
CV							0.89	3.07	6.5
Replicate F							9.829	9.743	6.903
Replicate Prob(F)							0.0001	0.0009	0.0010
Treatment F							3.563	5.914	12.618
Treatment Prob(F)							0.0022	0.0002	0.0001

LSU AgCenter
Rice Research Station
Medark Nitrogen Validation 3.1

Trial ID: 05-CM-07
Location: Rice Research Station

Crop Name							Rice	Rice	Rice	Rice	Rice
Rating Date								1-Aug-2005	11-Aug-2005	7-Nov-2005	
Rating Data Type							50% Head	Height	Yield	Yield	Yield
Rating Unit							days	inches	lb/A	lb/A	lb/A
Crop Stage							Main	Main	Main	Ratoon	Total
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
1	Urea	46	GR	90	LB AI/A	Preflood	88	29	6545	980	7594
1	Urea	46	GR	0	LB AI/A	Midseason					
2	Urea	46	GR	90	LB AI/A	Preflood	88	30	6522	946	7635
2	Urea	46	GR	30	LB AI/A	Midseason					
3	Urea	46	GR	90	LB AI/A	Preflood	87	30	7537	941	8478
3	Urea	46	GR	60	LB AI/A	Midseason					
4	Urea	46	GR	120	LB AI/A	Preflood	88	30	7348	973	8321
4	Urea	46	GR	0	LB AI/A	Midseason					
5	Urea	46	GR	120	LB AI/A	Preflood	88	30	7595	952	8548
5	Urea	46	GR	30	LB AI/A	Midseason					
6	Urea	46	GR	120	LB AI/A	Preflood	88	30	7757	911	8606
6	Urea	46	GR	60	LB AI/A	Midseason					
7	Urea	46	GR	150	LB AI/A	Preflood	89	32	7778	957	8735
7	Urea	46	GR	0	LB AI/A	Midseason					
8	Urea	46	GR	150	LB AI/A	Preflood	89	31	7864	980	9044
8	Urea	46	GR	30	LB AI/A	Midseason					
9	Urea	46	GR	150	LB AI/A	Preflood	88	32	7881	929	8811
9	Urea	46	GR	60	LB AI/A	Midseason					
10	Urea	46	GR	180	LB AI/A	Preflood	89	32	7787	883	8512
10	Urea	46	GR	0	LB AI/A	Midseason					
11	Urea	46	GR	180	LB AI/A	Preflood	89	32	8022	901	8922
11	Urea	46	GR	30	LB AI/A	Midseason					
12	Urea	46	GR	180	LB AI/A	Preflood	89	33	8147	920	8892
12	Urea	46	GR	60	LB AI/A	Midseason					
LSD (P=.05)							0.9	1.4	688.1	137.9	801.8
Standard Deviation							0.6	0.8	476.5	94.9	551.5
CV							0.69	2.66	6.3	10.1	6.48
Replicate F							13.595	5.684	5.917	0.196	3.428
Replicate Prob(F)							0.0001	0.0102	0.0024	0.8982	0.0317
Treatment F							4.979	5.662	4.876	0.442	2.860
Treatment Prob(F)							0.0002	0.0003	0.0002	0.9216	0.0135

Rice Variety Nitrogen Validation Experiments at Vermilion Parish

Experiment number ..... : 05-VP-01 to 05-VP-07

Site and design ..... :
- **Location/Cooperator** ..... : Vermilion Parish / Lounsberry Farm
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** ..... : 4
- **Plot size** ..... : 7 x 20 ft
- **Row width/rows per plot** ..... : 7 in / 12

Soil type ..... : Crowley silt loam
- **% organic matter** ..... : 1.74
- **pH** ..... : 4.7
- **Extractable nutrients** ..... : P-111; K-158; Na-66; Ca-674; Mg-135; Zn-2.5; Fe-228 ppm

Crop/Variety ..... : Rice / Multiple (Seed data sheet)
- **Planting method/date** ..... : Drill seeded / March 30
- **Seeding rate/depth** ..... : 40 seed/ft^2 / 1 in
- **Emergence date** ..... : April 7
- **Harvest date** ..... : August 8

Fertilization ..... : 200 lb/A 0-26-26, March 14

Water management ..... :
- **Flush** ..... : March 14, 24
- **Flood** ..... : May 6
- **Drain** ..... : July 25

Pest management ..... :
- **Herbicides** ..... : 0.5 oz/A Permit + 3 qt/A Duet, April 21; 3 qt/A Arrosolo + 1 oz/A Permit, May 4
- **Insecticides** ..... : 1.5 pt/A Malathion, June 24
- **Fungicides** ..... : 12 oz/A Quadris, June 13 and 29

LSU AgCenter
Rice Research Station
Cheniere Nitrogen Validation 4.2

Trial ID: 05-VP-01
Location: Vermilion Parish

Crop Name							Rice	Rice	Rice
Rating Date								1-Aug-2005	1-Aug-2005
Rating Data Type							50% Head	Height	Yield
Rating Unit							days	inches	lb/A
Crop Stage							Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	Urea	46	GR	90	LB AI/A	Preflood	81	34	8371
1	Urea	46	GR	0	LB AI/A	Midseason			
2	Urea	46	GR	90	LB AI/A	Preflood	81	31	8411
2	Urea	46	GR	30	LB AI/A	Midseason			
3	Urea	46	GR	90	LB AI/A	Preflood	81	35	8673
3	Urea	46	GR	60	LB AI/A	Midseason			
4	Urea	46	GR	120	LB AI/A	Preflood	82	34	8881
4	Urea	46	GR	0	LB AI/A	Midseason			
5	Urea	46	GR	120	LB AI/A	Preflood	83	35	8845
5	Urea	46	GR	30	LB AI/A	Midseason			
6	Urea	46	GR	120	LB AI/A	Preflood	83	33	8753
6	Urea	46	GR	60	LB AI/A	Midseason			
7	Urea	46	GR	150	LB AI/A	Preflood	84	35	8215
7	Urea	46	GR	0	LB AI/A	Midseason			
8	Urea	46	GR	150	LB AI/A	Preflood	84	34	8277
8	Urea	46	GR	30	LB AI/A	Midseason			
9	Urea	46	GR	150	LB AI/A	Preflood	83	33	9053
9	Urea	46	GR	60	LB AI/A	Midseason			
10	Urea	46	GR	180	LB AI/A	Preflood	84	35	8807
10	Urea	46	GR	0	LB AI/A	Midseason			
11	Urea	46	GR	180	LB AI/A	Preflood	84	35	8827
11	Urea	46	GR	30	LB AI/A	Midseason			
12	Urea	46	GR	180	LB AI/A	Preflood	84	34	8669
12	Urea	46	GR	60	LB AI/A	Midseason			
LSD (P=.05)							0.9	2.6	926.5
Standard Deviation							0.6	1.5	641.7
CV							0.73	4.47	7.42
Replicate F							0.834	0.921	0.549
Replicate Prob(F)							0.4846	0.4130	0.6523
Treatment F							16.448	1.730	0.693
Treatment Prob(F)							0.0001	0.1319	0.7357

LSU AgCenter
Rice Research Station
CL131 Nitrogen Validation 1.2

Trial ID: 05-VP-02
Location: Vermilion Parish

Crop Name							Rice	Rice	Rice
Rating Date								1-Aug-2005	1-Aug-2005
Rating Data Type							50% Head	Height	Yield
Rating Unit							days	inches	lb/A
Crop Stage							Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	Urea	46	GR	90	LB AI/A	Preflood	81	29	8128
1	Urea	46	GR	0	LB AI/A	Midseason			
2	Urea	46	GR	90	LB AI/A	Preflood	82	29	8608
2	Urea	46	GR	30	LB AI/A	Midseason			
3	Urea	46	GR	90	LB AI/A	Preflood	82	32	8349
3	Urea	46	GR	60	LB AI/A	Midseason			
4	Urea	46	GR	120	LB AI/A	Preflood	82	30	8414
4	Urea	46	GR	0	LB AI/A	Midseason			
5	Urea	46	GR	120	LB AI/A	Preflood	82	31	8374
5	Urea	46	GR	30	LB AI/A	Midseason			
6	Urea	46	GR	120	LB AI/A	Preflood	83	32	8708
6	Urea	46	GR	60	LB AI/A	Midseason			
7	Urea	46	GR	150	LB AI/A	Preflood	83	31	8169
7	Urea	46	GR	0	LB AI/A	Midseason			
8	Urea	46	GR	150	LB AI/A	Preflood	83	31	8229
8	Urea	46	GR	30	LB AI/A	Midseason			
9	Urea	46	GR	150	LB AI/A	Preflood	83	31	8461
9	Urea	46	GR	60	LB AI/A	Midseason			
10	Urea	46	GR	180	LB AI/A	Preflood	84	31	8357
10	Urea	46	GR	0	LB AI/A	Midseason			
11	Urea	46	GR	180	LB AI/A	Preflood	84	31	8031
11	Urea	46	GR	30	LB AI/A	Midseason			
12	Urea	46	GR	180	LB AI/A	Preflood	84	31	7740
12	Urea	46	GR	60	LB AI/A	Midseason			
LSD (P=.05)							0.9	2.0	769.4
Standard Deviation							0.6	1.2	532.8
CV							0.77	3.82	6.42
Replicate F							1.788	0.868	2.666
Replicate Prob(F)							0.1687	0.4337	0.0638
Treatment F							8.363	2.150	0.959
Treatment Prob(F)							0.0001	0.0609	0.5004

LSU AgCenter
Rice Research Station
Trenasse Nitrogen Validation 2.2

Trial ID: 05-VP-03
Location: Vermilion Parish

Crop Name							Rice	Rice	Rice
Rating Date								1-Aug-2005	1-Aug-2005
Rating Data Type							50% Head	Height	Yield
Rating Unit							days	inches	lb/A
Crop Stage							Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	Urea	46	GR	90	LB AI/A	Preflood	74	36	9572
1	Urea	46	GR	0	LB AI/A	Midseason			
2	Urea	46	GR	90	LB AI/A	Preflood	75	37	9265
2	Urea	46	GR	30	LB AI/A	Midseason			
3	Urea	46	GR	90	LB AI/A	Preflood	75	36	9363
3	Urea	46	GR	60	LB AI/A	Midseason			
4	Urea	46	GR	120	LB AI/A	Preflood	77	37	9241
4	Urea	46	GR	0	LB AI/A	Midseason			
5	Urea	46	GR	120	LB AI/A	Preflood	77	38	9240
5	Urea	46	GR	30	LB AI/A	Midseason			
6	Urea	46	GR	120	LB AI/A	Preflood	77	36	8934
6	Urea	46	GR	60	LB AI/A	Midseason			
7	Urea	46	GR	150	LB AI/A	Preflood	76	36	8967
7	Urea	46	GR	0	LB AI/A	Midseason			
8	Urea	46	GR	150	LB AI/A	Preflood	77	37	9015
8	Urea	46	GR	30	LB AI/A	Midseason			
9	Urea	46	GR	150	LB AI/A	Preflood	77	36	8427
9	Urea	46	GR	60	LB AI/A	Midseason			
10	Urea	46	GR	180	LB AI/A	Preflood	78	38	8682
10	Urea	46	GR	0	LB AI/A	Midseason			
11	Urea	46	GR	180	LB AI/A	Preflood	78	37	8710
11	Urea	46	GR	30	LB AI/A	Midseason			
12	Urea	46	GR	180	LB AI/A	Preflood	78	37	8943
12	Urea	46	GR	60	LB AI/A	Midseason			
LSD (P=.05)							0.9	2.1	585.0
Standard Deviation							0.6	1.2	405.1
CV							0.79	3.29	4.49
Replicate F							1.125	5.812	6.349
Replicate Prob(F)							0.3532	0.0094	0.0016
Treatment F							15.655	1.630	2.565
Treatment Prob(F)							0.0001	0.1586	0.0180

LSU AgCenter
Rice Research Station
Jupiter Nitrogen Validation 2.2

Trial ID: 05-VP-04
Location: Vermilion Parish

Crop Name							Rice	Rice	Rice
Rating Date								1-Aug-2005	1-Aug-2005
Rating Data Type							50% Head	Height	Yield
Rating Unit							days	inches	lb/A
Crop Stage							Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	Urea	46	GR	90	LB AI/A	Preflood	87	35	9785
1	Urea	46	GR	0	LB AI/A	Midseason			
2	Urea	46	GR	90	LB AI/A	Preflood	86	34	9981
2	Urea	46	GR	30	LB AI/A	Midseason			
3	Urea	46	GR	90	LB AI/A	Preflood	87	35	9682
3	Urea	46	GR	60	LB AI/A	Midseason			
4	Urea	46	GR	120	LB AI/A	Preflood	87	35	9957
4	Urea	46	GR	0	LB AI/A	Midseason			
5	Urea	46	GR	120	LB AI/A	Preflood	88	35	9479
5	Urea	46	GR	30	LB AI/A	Midseason			
6	Urea	46	GR	120	LB AI/A	Preflood	88	36	9774
6	Urea	46	GR	60	LB AI/A	Midseason			
7	Urea	46	GR	150	LB AI/A	Preflood	88	36	9893
7	Urea	46	GR	0	LB AI/A	Midseason			
8	Urea	46	GR	150	LB AI/A	Preflood	88	37	9991
8	Urea	46	GR	30	LB AI/A	Midseason			
9	Urea	46	GR	150	LB AI/A	Preflood	89	37	9720
9	Urea	46	GR	60	LB AI/A	Midseason			
10	Urea	46	GR	180	LB AI/A	Preflood	88	36	9922
10	Urea	46	GR	0	LB AI/A	Midseason			
11	Urea	46	GR	180	LB AI/A	Preflood	89	37	9756
11	Urea	46	GR	30	LB AI/A	Midseason			
12	Urea	46	GR	180	LB AI/A	Preflood	89	37	9554
12	Urea	46	GR	60	LB AI/A	Midseason			
LSD (P=.05)							0.9	1.9	496.7
Standard Deviation							0.6	1.1	344.0
CV							0.72	3.06	3.51
Replicate F							6.346	2.588	5.101
Replicate Prob(F)							0.0016	0.0978	0.0052
Treatment F							6.962	2.191	0.930
Treatment Prob(F)							0.0001	0.0565	0.5247

LSU AgCenter
Rice Research Station
Banks Nitrogen Validation 3.2

Trial ID: 05-VP-05
Location: Vermilion Parish

Crop Name							Rice	Rice	Rice
Rating Date								1-Aug-2005	1-Aug-2005
Rating Data Type							50% Head	Height	Yield
Rating Unit							days	inches	lb/A
Crop Stage									
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	Urea	46	GR	90	LB AI/A	Preflood	82	41	9416
1	Urea	46	GR	0	LB AI/A	Midseason			
2	Urea	46	GR	90	LB AI/A	Preflood	82	42	9478
2	Urea	46	GR	30	LB AI/A	Midseason			
3	Urea	46	GR	90	LB AI/A	Preflood	83	43	9490
3	Urea	46	GR	60	LB AI/A	Midseason			
4	Urea	46	GR	120	LB AI/A	Preflood	84	44	9238
4	Urea	46	GR	0	LB AI/A	Midseason			
5	Urea	46	GR	120	LB AI/A	Preflood	84	43	9483
5	Urea	46	GR	30	LB AI/A	Midseason			
6	Urea	46	GR	120	LB AI/A	Preflood	85	44	9073
6	Urea	46	GR	60	LB AI/A	Midseason			
7	Urea	46	GR	150	LB AI/A	Preflood	85	44	9456
7	Urea	46	GR	0	LB AI/A	Midseason			
8	Urea	46	GR	150	LB AI/A	Preflood	85	46	9062
8	Urea	46	GR	30	LB AI/A	Midseason			
9	Urea	46	GR	150	LB AI/A	Preflood	86	45	9007
9	Urea	46	GR	60	LB AI/A	Midseason			
10	Urea	46	GR	180	LB AI/A	Preflood	86	45	8895
10	Urea	46	GR	0	LB AI/A	Midseason			
11	Urea	46	GR	180	LB AI/A	Preflood	86	46	9356
11	Urea	46	GR	30	LB AI/A	Midseason			
12	Urea	46	GR	180	LB AI/A	Preflood	87	46	8836
12	Urea	46	GR	60	LB AI/A	Midseason			
LSD (P=.05)							1.2	1.8	616.1
Standard Deviation							0.8	1.1	426.7
CV							0.97	2.42	4.62
Replicate F							0.933	6.933	1.442
Replicate Prob(F)							0.4358	0.0046	0.2482
Treatment F							14.458	5.797	1.327
Treatment Prob(F)							0.0001	0.0002	0.2538

LSU AgCenter
Rice Research Station
Cybonnet Nitrogen Validation 3.2

Trial ID: 05-VP-06
Location: Vermilion Parish

Crop Name							Rice	Rice	Rice
Rating Date								1-Aug-2005	
Rating Data Type							50% Head	Height	Yield
Rating Unit							days	inches	lb/A
Crop Stage							Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	Urea	46	GR	90	LB AI/A	Preflood	80	34	8882
1	Urea	46	GR	0	LB AI/A	Midseason			
2	Urea	46	GR	90	LB AI/A	Preflood	81	34	8780
2	Urea	46	GR	30	LB AI/A	Midseason			
3	Urea	46	GR	90	LB AI/A	Preflood	81	35	8793
3	Urea	46	GR	60	LB AI/A	Midseason			
4	Urea	46	GR	120	LB AI/A	Preflood	82	33	8854
4	Urea	46	GR	0	LB AI/A	Midseason			
5	Urea	46	GR	120	LB AI/A	Preflood	82	35	8800
5	Urea	46	GR	30	LB AI/A	Midseason			
6	Urea	46	GR	120	LB AI/A	Preflood	82	35	8955
6	Urea	46	GR	60	LB AI/A	Midseason			
7	Urea	46	GR	150	LB AI/A	Preflood	83	35	8932
7	Urea	46	GR	0	LB AI/A	Midseason			
8	Urea	46	GR	150	LB AI/A	Preflood	83	34	9202
8	Urea	46	GR	30	LB AI/A	Midseason			
9	Urea	46	GR	150	LB AI/A	Preflood	83	35	9308
9	Urea	46	GR	60	LB AI/A	Midseason			
10	Urea	46	GR	180	LB AI/A	Preflood	83	36	9530
10	Urea	46	GR	0	LB AI/A	Midseason			
11	Urea	46	GR	180	LB AI/A	Preflood	83	35	8958
11	Urea	46	GR	30	LB AI/A	Midseason			
12	Urea	46	GR	180	LB AI/A	Preflood	83	35	8803
12	Urea	46	GR	60	LB AI/A	Midseason			
LSD (P=.05)							0.8	1.5	676.8
Standard Deviation							0.5	0.9	468.7
CV							0.63	2.53	5.22
Replicate F							11.206	8.908	2.149
Replicate Prob(F)							0.0001	0.0015	0.1128
Treatment F							13.430	2.239	1.037
Treatment Prob(F)							0.0001	0.0518	0.4380

LSU AgCenter
Rice Research Station
Medark Nitrogen Validation 3.2

Trial ID: 05-VP-07
Location: Vermilion Parish

Crop Name							Rice	Rice	Rice
Rating Date								1-Aug-2005	1-Aug-2005
Rating Data Type							50% Head	Height	Yield
Rating Unit							days	inches	lb/A
Crop Stage							Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	Urea	46	GR	90	LB AI/A	Preflood	84	33	8010
1	Urea	46	GR	0	LB AI/A	Midseason			
2	Urea	46	GR	90	LB AI/A	Preflood	84	33	7909
2	Urea	46	GR	30	LB AI/A	Midseason			
3	Urea	46	GR	90	LB AI/A	Preflood	85	34	7966
3	Urea	46	GR	60	LB AI/A	Midseason			
4	Urea	46	GR	120	LB AI/A	Preflood	85	34	7736
4	Urea	46	GR	0	LB AI/A	Midseason			
5	Urea	46	GR	120	LB AI/A	Preflood	86	34	7247
5	Urea	46	GR	30	LB AI/A	Midseason			
6	Urea	46	GR	120	LB AI/A	Preflood	86	35	7803
6	Urea	46	GR	60	LB AI/A	Midseason			
7	Urea	46	GR	150	LB AI/A	Preflood	85	34	7632
7	Urea	46	GR	0	LB AI/A	Midseason			
8	Urea	46	GR	150	LB AI/A	Preflood	86	35	7554
8	Urea	46	GR	30	LB AI/A	Midseason			
9	Urea	46	GR	150	LB AI/A	Preflood	86	35	7786
9	Urea	46	GR	60	LB AI/A	Midseason			
10	Urea	46	GR	180	LB AI/A	Preflood	86	34	7655
10	Urea	46	GR	0	LB AI/A	Midseason			
11	Urea	46	GR	180	LB AI/A	Preflood	87	36	7510
11	Urea	46	GR	30	LB AI/A	Midseason			
12	Urea	46	GR	180	LB AI/A	Preflood	87	36	7898
12	Urea	46	GR	60	LB AI/A	Midseason			
LSD (P=.05)							0.9	1.6	662.2
Standard Deviation							0.6	1.0	458.6
CV							0.71	2.81	5.94
Replicate F							3.367	0.385	0.387
Replicate Prob(F)							0.0301	0.6847	0.7634
Treatment F							9.122	2.682	0.917
Treatment Prob(F)							0.0001	0.0235	0.5360

Rice Variety Nitrogen Validation Experiments at Richland Parish

Experiment number ..... : 05-RP-01 to 05-RP-07

Site and design ..... :
- **Location/Cooperator** ..... : Richland Parish / Woodsland Plantation
- **Tillage type** ..... : Fall stale seedbed
- **Experimental design** ..... : Randomized complete block
- **Number of reps** ..... : 4
- **Plot size** ..... : 7 x 20 ft
- **Row width/rows per plot** ..... : 7 in / 12

Soil type ..... : Hebert silty clay
- **% organic matter** ..... : 2.81
- **pH** ..... : 5.9
- **Extractable nutrients** ..... : P-108; K-195; Na-136; Ca-2509; Mg-579; Zn-1.2; Fe-207 ppm

Crop/Variety ..... : Rice / Multiple (See data sheet)
- **Planting method/date** ..... : Drill seeded / May 5
- **Seeding rate/depth** ..... : 40 seed/ft^2 / 0.75 in
- **Emergence date** ..... : May 11
- **Harvest date** ..... : September 13

Fertilization ..... : NA

Water management ..... :
- **Flush** ..... : May 14
- **Flood** ..... : June 15
- **Drain** ..... : September 1

Pest management ..... :
- **Herbicides** ..... : 16 oz/A Command + 21 oz/A Touchdown + 16 oz/A Preference (surfactant), May 6; 1 gal/A Duet + 10.6 oz/A Grandstand + 1 qt/A COC, June 4; 15 oz/A Clincher + 1 qt/A COC, June 23
- **Insecticides** ..... : 1.8 oz/A Karate, June 11 and July 23
- **Fungicides** ..... : 14 oz/A Quilt, July 23

LSU AgCenter
Rice Research Station
Cheniere Nitrogen Validation 4.3

Trial ID: 05-RP-01
Location: Richland Parish

Crop Name							Rice	Rice	Rice
Rating Date								14-Sep-2005	14-Sep-2005
Rating Data Type							50% Head	Height	Yield
Rating Unit							days	inches	lb/A
Crop Stage							Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	Urea	46	GR	90	LB AI/A	Preflood	83	33	9023
1	Urea	46	GR	0	LB AI/A	Midseason			
2	Urea	46	GR	90	LB AI/A	Preflood	83	34	9469
2	Urea	46	GR	30	LB AI/A	Midseason			
3	Urea	46	GR	90	LB AI/A	Preflood	84	33	9612
3	Urea	46	GR	60	LB AI/A	Midseason			
4	Urea	46	GR	120	LB AI/A	Preflood	84	33	10013
4	Urea	46	GR	0	LB AI/A	Midseason			
5	Urea	46	GR	120	LB AI/A	Preflood	84	33	9834
5	Urea	46	GR	30	LB AI/A	Midseason			
6	Urea	46	GR	120	LB AI/A	Preflood	84	34	9690
6	Urea	46	GR	60	LB AI/A	Midseason			
7	Urea	46	GR	150	LB AI/A	Preflood	86	33	9924
7	Urea	46	GR	0	LB AI/A	Midseason			
8	Urea	46	GR	150	LB AI/A	Preflood	85	33	9681
8	Urea	46	GR	30	LB AI/A	Midseason			
9	Urea	46	GR	150	LB AI/A	Preflood	86	33	9924
9	Urea	46	GR	60	LB AI/A	Midseason			
10	Urea	46	GR	180	LB AI/A	Preflood	86	33	10148
10	Urea	46	GR	0	LB AI/A	Midseason			
11	Urea	46	GR	180	LB AI/A	Preflood	86	32	9457
11	Urea	46	GR	30	LB AI/A	Midseason			
12	Urea	46	GR	180	LB AI/A	Preflood	87	33	9408
12	Urea	46	GR	60	LB AI/A	Midseason			
LSD (P=.05)							1.7	1.3	945.2
Standard Deviation							1.1	0.8	654.6
CV							1.35	2.38	6.76
Replicate F							7.347	14.861	3.532
Replicate Prob(F)							0.0007	0.0001	0.0253
Treatment F							6.579	0.865	0.913
Treatment Prob(F)							0.0001	0.5839	0.5392

LSU AgCenter
Rice Research Station
CL131 Nitrogen Validation 1.3

Trial ID: 05-RP-02
Location: Richland Parish

Crop Name							Rice	Rice	Rice
Rating Date								14-Sep-2005	14-Sep-2005
Rating Data Type							50% Head	Height	Yield
Rating Unit							days	inches	lb/A
Crop Stage							Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	Urea	46	GR	90	LB AI/A	Preflood	82	28	8325
1	Urea	46	GR	0	LB AI/A	Midseason			
2	Urea	46	GR	90	LB AI/A	Preflood	82	28	8678
2	Urea	46	GR	30	LB AI/A	Midseason			
3	Urea	46	GR	90	LB AI/A	Preflood	83	28	9110
3	Urea	46	GR	60	LB AI/A	Midseason			
4	Urea	46	GR	120	LB AI/A	Preflood	83	28	8417
4	Urea	46	GR	0	LB AI/A	Midseason			
5	Urea	46	GR	120	LB AI/A	Preflood	84	29	9083
5	Urea	46	GR	30	LB AI/A	Midseason			
6	Urea	46	GR	120	LB AI/A	Preflood	84	28	9237
6	Urea	46	GR	60	LB AI/A	Midseason			
7	Urea	46	GR	150	LB AI/A	Preflood	84	28	8439
7	Urea	46	GR	0	LB AI/A	Midseason			
8	Urea	46	GR	150	LB AI/A	Preflood	85	29	8725
8	Urea	46	GR	30	LB AI/A	Midseason			
9	Urea	46	GR	150	LB AI/A	Preflood	85	29	8880
9	Urea	46	GR	60	LB AI/A	Midseason			
10	Urea	46	GR	180	LB AI/A	Preflood	85	29	8672
10	Urea	46	GR	0	LB AI/A	Midseason			
11	Urea	46	GR	180	LB AI/A	Preflood	86	29	9009
11	Urea	46	GR	30	LB AI/A	Midseason			
12	Urea	46	GR	180	LB AI/A	Preflood	86	29	8775
12	Urea	46	GR	60	LB AI/A	Midseason			
LSD (P=.05)							0.9	1.3	510.1
Standard Deviation							0.6	0.8	353.3
CV							0.77	2.72	4.02
Replicate F							10.096	11.278	4.479
Replicate Prob(F)							0.0001	0.0004	0.0096
Treatment F							18.644	1.228	2.773
Treatment Prob(F)							0.0001	0.3265	0.0115

LSU AgCenter
Rice Research Station
Trenasse Nitrogen Validation 2.3

Trial ID: 05-RP-03
Location: Richland Parish

Crop Name							Rice	Rice	Rice	Rice
Rating Date								14-Sep-2005	14-Sep-2005	14-Sep-2005
Rating Data Type							50% Head	Height	Ldg-Rate	Ldg-Type
Rating Unit							days	inches	%	1-5
Crop Stage							Main	Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage				
1	Urea	46	GR	90	LB AI/A	Preflood	73	33		
1	Urea	46	GR	0	LB AI/A	Midseason				
2	Urea	46	GR	90	LB AI/A	Preflood	73	33		
2	Urea	46	GR	30	LB AI/A	Midseason				
3	Urea	46	GR	90	LB AI/A	Preflood	73	33	20	3
3	Urea	46	GR	60	LB AI/A	Midseason				
4	Urea	46	GR	120	LB AI/A	Preflood	75	33		
4	Urea	46	GR	0	LB AI/A	Midseason				
5	Urea	46	GR	120	LB AI/A	Preflood	74	33	20	3
5	Urea	46	GR	30	LB AI/A	Midseason				
6	Urea	46	GR	120	LB AI/A	Preflood	75	34	80	4
6	Urea	46	GR	60	LB AI/A	Midseason				
7	Urea	46	GR	150	LB AI/A	Preflood	74	33	38	3
7	Urea	46	GR	0	LB AI/A	Midseason				
8	Urea	46	GR	150	LB AI/A	Preflood	76	33	15	4
8	Urea	46	GR	30	LB AI/A	Midseason				
9	Urea	46	GR	150	LB AI/A	Preflood	75	34	38	4
9	Urea	46	GR	60	LB AI/A	Midseason				
10	Urea	46	GR	180	LB AI/A	Preflood	76	34	18	3
10	Urea	46	GR	0	LB AI/A	Midseason				
11	Urea	46	GR	180	LB AI/A	Preflood	75	34	30	3
11	Urea	46	GR	30	LB AI/A	Midseason				
12	Urea	46	GR	180	LB AI/A	Preflood	77	34	10	3
12	Urea	46	GR	60	LB AI/A	Midseason				
LSD (P=.05)							1.6	1.1	43.5	1.1
Standard Deviation							1.1	0.7	20.7	0.5
CV							1.46	1.95	69.48	16.04
Replicate F							32.577	0.786	2.210	1.801
Replicate Prob(F)							0.0001	0.4682	0.2053	0.2575
Treatment F							5.321	0.857	3.152	4.531
Treatment Prob(F)							0.0001	0.5907	0.1108	0.0564

LSU AgCenter
Rice Research Station
Jupiter Nitrogen Validation 2.3

Trial ID: 05-RP-04
Location: Richland Parish

Crop Name							Rice	Rice	Rice
Rating Date								14-Sep-2005	15-Sep-2005
Rating Data Type							50% Head	Height	Yield
Rating Unit							days	inches	lb/A
Crop Stage							Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	Urea	46	GR	90	LB AI/A	Preflood	80	28	8086
1	Urea	46	GR	0	LB AI/A	Midseason			
2	Urea	46	GR	90	LB AI/A	Preflood	80	28	8778
2	Urea	46	GR	30	LB AI/A	Midseason			
3	Urea	46	GR	90	LB AI/A	Preflood	80	28	9700
3	Urea	46	GR	60	LB AI/A	Midseason			
4	Urea	46	GR	120	LB AI/A	Preflood	80	28	8756
4	Urea	46	GR	0	LB AI/A	Midseason			
5	Urea	46	GR	120	LB AI/A	Preflood	80	29	9187
5	Urea	46	GR	30	LB AI/A	Midseason			
6	Urea	46	GR	120	LB AI/A	Preflood	81	29	9791
6	Urea	46	GR	60	LB AI/A	Midseason			
7	Urea	46	GR	150	LB AI/A	Preflood	81	28	8971
7	Urea	46	GR	0	LB AI/A	Midseason			
8	Urea	46	GR	150	LB AI/A	Preflood	82	30	9510
8	Urea	46	GR	30	LB AI/A	Midseason			
9	Urea	46	GR	150	LB AI/A	Preflood	81	30	9917
9	Urea	46	GR	60	LB AI/A	Midseason			
10	Urea	46	GR	180	LB AI/A	Preflood	82	30	10009
10	Urea	46	GR	0	LB AI/A	Midseason			
11	Urea	46	GR	180	LB AI/A	Preflood	81	29	9560
11	Urea	46	GR	30	LB AI/A	Midseason			
12	Urea	46	GR	180	LB AI/A	Preflood	82	29	10170
12	Urea	46	GR	60	LB AI/A	Midseason			
LSD (P=.05)							0.9	1.2	815.1
Standard Deviation							0.6	0.7	564.5
CV							0.79	2.41	6.02
Replicate F							6.288	2.750	3.479
Replicate Prob(F)							0.0017	0.0859	0.0267
Treatment F							4.710	3.688	4.860
Treatment Prob(F)							0.0003	0.0044	0.0002

LSU AgCenter
Rice Research Station
Banks Nitrogen Validation 3.3

Trial ID: 05-RP-05
Location: Richland Parish

Crop Name							Rice	Rice	Rice
Rating Date								15-Sep-2005	15-Sep-2005
Rating Data Type							50% Head	Height	Yield
Rating Unit							days	inches	lb/A
Crop Stage							Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	Urea	46	GR	90	LB AI/A	Preflood	84	36	7938
1	Urea	46	GR	0	LB AI/A	Midseason			
2	Urea	46	GR	90	LB AI/A	Preflood	84	37	8898
2	Urea	46	GR	30	LB AI/A	Midseason			
3	Urea	46	GR	90	LB AI/A	Preflood	85	37	9307
3	Urea	46	GR	60	LB AI/A	Midseason			
4	Urea	46	GR	120	LB AI/A	Preflood	86	37	8974
4	Urea	46	GR	0	LB AI/A	Midseason			
5	Urea	46	GR	120	LB AI/A	Preflood	87	38	9889
5	Urea	46	GR	30	LB AI/A	Midseason			
6	Urea	46	GR	120	LB AI/A	Preflood	88	39	9622
6	Urea	46	GR	60	LB AI/A	Midseason			
7	Urea	46	GR	150	LB AI/A	Preflood	89	38	8846
7	Urea	46	GR	0	LB AI/A	Midseason			
8	Urea	46	GR	150	LB AI/A	Preflood	89	39	9202
8	Urea	46	GR	30	LB AI/A	Midseason			
9	Urea	46	GR	150	LB AI/A	Preflood	90	39	9305
9	Urea	46	GR	60	LB AI/A	Midseason			
10	Urea	46	GR	180	LB AI/A	Preflood	90	38	8908
10	Urea	46	GR	0	LB AI/A	Midseason			
11	Urea	46	GR	180	LB AI/A	Preflood	91	39	9200
11	Urea	46	GR	30	LB AI/A	Midseason			
12	Urea	46	GR	180	LB AI/A	Preflood	91	39	9601
12	Urea	46	GR	60	LB AI/A	Midseason			
LSD (P=.05)							1.2	2.0	719.1
Standard Deviation							0.8	1.2	498.0
CV							0.95	3.09	5.45
Replicate F							7.277	0.383	3.491
Replicate Prob(F)							0.0007	0.6859	0.0264
Treatment F							37.148	2.150	4.017
Treatment Prob(F)							0.0001	0.0609	0.0009

LSU AgCenter
Rice Research Station
Cybonnet Nitrogen Validation 3.3

Trial ID: 05-RP-06
Location: Richland Parish

Crop Name							Rice	Rice	Rice
Rating Date								15-Sep-2005	15-Sep-2005
Rating Data Type							50% Head	Height	Yield
Rating Unit							days	inches	lb/A
Crop Stage							Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	Urea	46	GR	90	LB AI/A	Preflood	83	33	7956
1	Urea	46	GR	0	LB AI/A	Midseason			
2	Urea	46	GR	90	LB AI/A	Preflood	83	33	8511
2	Urea	46	GR	30	LB AI/A	Midseason			
3	Urea	46	GR	90	LB AI/A	Preflood	83	34	8854
3	Urea	46	GR	60	LB AI/A	Midseason			
4	Urea	46	GR	120	LB AI/A	Preflood	84	33	8703
4	Urea	46	GR	0	LB AI/A	Midseason			
5	Urea	46	GR	120	LB AI/A	Preflood	85	34	8535
5	Urea	46	GR	30	LB AI/A	Midseason			
6	Urea	46	GR	120	LB AI/A	Preflood	85	34	9250
6	Urea	46	GR	60	LB AI/A	Midseason			
7	Urea	46	GR	150	LB AI/A	Preflood	85	33	8774
7	Urea	46	GR	0	LB AI/A	Midseason			
8	Urea	46	GR	150	LB AI/A	Preflood	86	33	8911
8	Urea	46	GR	30	LB AI/A	Midseason			
9	Urea	46	GR	150	LB AI/A	Preflood	86	33	8918
9	Urea	46	GR	60	LB AI/A	Midseason			
10	Urea	46	GR	180	LB AI/A	Preflood	87	33	8494
10	Urea	46	GR	0	LB AI/A	Midseason			
11	Urea	46	GR	180	LB AI/A	Preflood	88	33	8814
11	Urea	46	GR	30	LB AI/A	Midseason			
12	Urea	46	GR	180	LB AI/A	Preflood	87	33	8662
12	Urea	46	GR	60	LB AI/A	Midseason			
LSD (P=.05)							1.1	1.1	663.4
Standard Deviation							0.8	0.7	459.4
CV							0.89	1.99	5.28
Replicate F							22.110	13.416	4.458
Replicate Prob(F)							0.0001	0.0002	0.0098
Treatment F							20.639	1.642	1.891
Treatment Prob(F)							0.0001	0.1552	0.0776

LSU AgCenter
Rice Research Station
Medark Nitrogen Validation 3.3

Trial ID: 05-RP-07
Location: Richland Parish

Crop Name							Rice	Rice	Rice
Rating Date								15-Sep-2005	15-Sep-2005
Rating Data Type							50% Head	Height	Yield
Rating Unit							days	inches	lb/A
Crop Stage							Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	Urea	46	GR	90	LB AI/A	Preflood	78	29	8280
1	Urea	46	GR	0	LB AI/A	Midseason			
2	Urea	46	GR	90	LB AI/A	Preflood	78	29	8575
2	Urea	46	GR	30	LB AI/A	Midseason			
3	Urea	46	GR	90	LB AI/A	Preflood	78	30	9066
3	Urea	46	GR	60	LB AI/A	Midseason			
4	Urea	46	GR	120	LB AI/A	Preflood	79	29	8574
4	Urea	46	GR	0	LB AI/A	Midseason			
5	Urea	46	GR	120	LB AI/A	Preflood	80	30	8471
5	Urea	46	GR	30	LB AI/A	Midseason			
6	Urea	46	GR	120	LB AI/A	Preflood	80	30	9071
6	Urea	46	GR	60	LB AI/A	Midseason			
7	Urea	46	GR	150	LB AI/A	Preflood	80	29	8672
7	Urea	46	GR	0	LB AI/A	Midseason			
8	Urea	46	GR	150	LB AI/A	Preflood	81	29	9021
8	Urea	46	GR	30	LB AI/A	Midseason			
9	Urea	46	GR	150	LB AI/A	Preflood	81	30	9014
9	Urea	46	GR	60	LB AI/A	Midseason			
10	Urea	46	GR	180	LB AI/A	Preflood	81	30	9243
10	Urea	46	GR	0	LB AI/A	Midseason			
11	Urea	46	GR	180	LB AI/A	Preflood	82	30	9166
11	Urea	46	GR	30	LB AI/A	Midseason			
12	Urea	46	GR	180	LB AI/A	Preflood	82	30	8792
12	Urea	46	GR	60	LB AI/A	Midseason			
LSD (P=.05)							1.3	1.3	711.2
Standard Deviation							0.9	0.7	492.5
CV							1.09	2.53	5.58
Replicate F							1.582	1.543	9.038
Replicate Prob(F)							0.2123	0.2360	0.0002
Treatment F							10.043	1.448	1.583
Treatment Prob(F)							0.0001	0.2210	0.1500

Rice Nitrogen Validation Experiments in Water-Seeded Cultural System

Experiment number ..... : 05-CS-04 to 05-CS-06

Site and design ..... :
- **Location/Cooperator** ..... : Rice Research Station (South Unit)
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** ..... : 4
- **Plot size** ..... : 7 x 20 ft
- **Row width/rows per plot** ..... : NA

Soil type ..... : Crowley silt loam
- **% organic matter** ..... : 1.68
- **pH** ..... : 7.2
- **Extractable nutrients** ..... : P-66; K-149; Na-186; Ca-1915; Mg-486; Zn-2.9; Fe-58 ppm

Crop/Variety ..... : Rice / Multiple (See data sheet)
- **Planting method/date** ..... : Water seeded / April 8
- **Seeding rate/depth** ..... : 60 seed/ft^2
- **Emergence date** ..... : NA
- **Harvest date** ..... : August 9

Fertilization ..... : 300 lb/A 0-24-24, September 20, 2004; 200 lb/A 46-0-0 postharvest, August 10

Water management ..... :
- **Flush** ..... : NA
- **Flood** ..... : April 14
- **Drain** ..... : July 25

Pest management ..... :
- **Herbicides** ..... : 1.5 pt/A Basagran + 1 qt/A COC, May 16; 15 oz/A Clincher + 1 qt/A COC, June 1 and 29
- **Insecticides** ..... : 1 oz Icon seed treatment
- **Fungicides** ..... : None

LSU AgCenter
Rice Research Station
Cheniere Nitrogen Validation in Water-Seeded Cultural System

Trial ID: 05-CS-04
Location: RRS-South Unit

Crop Name							Rice	Rice	Rice
Rating Date								29-Jul-2005	9-Aug-2005
Rating Data Type							50% Head	Height	Yield
Rating Unit							days	inches	lb/A
Crop Stage							Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	Urea	46	GR	90	LB AI/A	Preplant	86	29	5922
1	Urea	46	GR	0	LB AI/A	Midseason			
2	Urea	46	GR	90	LB AI/A	Preplant	87	30	6462
2	Urea	46	GR	30	LB AI/A	Midseason			
3	Urea	46	GR	90	LB AI/A	Preplant	86	30	6827
3	Urea	46	GR	60	LB AI/A	Midseason			
4	Urea	46	GR	120	LB AI/A	Preplant	86	30	7042
4	Urea	46	GR	0	LB AI/A	Midseason			
5	Urea	46	GR	120	LB AI/A	Preplant	87	30	7153
5	Urea	46	GR	30	LB AI/A	Midseason			
6	Urea	46	GR	120	LB AI/A	Preplant	86	31	7240
6	Urea	46	GR	60	LB AI/A	Midseason			
7	Urea	46	GR	150	LB AI/A	Preplant	86	30	6739
7	Urea	46	GR	0	LB AI/A	Midseason			
8	Urea	46	GR	150	LB AI/A	Preplant	87	31	7495
8	Urea	46	GR	30	LB AI/A	Midseason			
9	Urea	46	GR	150	LB AI/A	Preplant	87	31	7599
9	Urea	46	GR	60	LB AI/A	Midseason			
10	Urea	46	GR	180	LB AI/A	Preplant	87	32	7537
10	Urea	46	GR	0	LB AI/A	Midseason			
11	Urea	46	GR	180	LB AI/A	Preplant	88	32	7547
11	Urea	46	GR	30	LB AI/A	Midseason			
12	Urea	46	GR	180	LB AI/A	Preplant	87	33	7689
12	Urea	46	GR	60	LB AI/A	Midseason			
LSD (P=.05)							1.3	1.2	578.8
Standard Deviation							0.9	0.7	400.9
CV							1.02	2.39	5.64
Replicate F							1.816	1.394	4.972
Replicate Prob(F)							0.1635	0.2691	0.0059
Treatment F							1.621	5.859	7.171
Treatment Prob(F)							0.1383	0.0002	0.0001

LSU AgCenter
Rice Research Station
CL131 Nitrogen Validation in Water-Seeded Cultural System

Trial ID: 05-CS-05
Location: RRS-South Unit

Crop Name							Rice	Rice	Rice
Rating Date								29-Jul-2005	9-Aug-2005
Rating Data Type							50% Head	Height	Yield
Rating Unit							days	inches	lb/A
Crop Stage							Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	Urea	46	GR	90	LB AI/A	Preplant	83	27	5480
1	Urea	46	GR	0	LB AI/A	Midseason			
2	Urea	46	GR	90	LB AI/A	Preplant	83	28	6646
2	Urea	46	GR	30	LB AI/A	Midseason			
3	Urea	46	GR	90	LB AI/A	Preplant	83	27	6235
3	Urea	46	GR	60	LB AI/A	Midseason			
4	Urea	46	GR	120	LB AI/A	Preplant	84	28	6711
4	Urea	46	GR	0	LB AI/A	Midseason			
5	Urea	46	GR	120	LB AI/A	Preplant	84	28	6716
5	Urea	46	GR	30	LB AI/A	Midseason			
6	Urea	46	GR	120	LB AI/A	Preplant	84	28	7057
6	Urea	46	GR	60	LB AI/A	Midseason			
7	Urea	46	GR	150	LB AI/A	Preplant	84	29	6914
7	Urea	46	GR	0	LB AI/A	Midseason			
8	Urea	46	GR	150	LB AI/A	Preplant	84	29	7034
8	Urea	46	GR	30	LB AI/A	Midseason			
9	Urea	46	GR	150	LB AI/A	Preplant	84	29	7533
9	Urea	46	GR	60	LB AI/A	Midseason			
10	Urea	46	GR	180	LB AI/A	Preplant	85	29	7061
10	Urea	46	GR	0	LB AI/A	Midseason			
11	Urea	46	GR	180	LB AI/A	Preplant	84	28	7630
11	Urea	46	GR	30	LB AI/A	Midseason			
12	Urea	46	GR	180	LB AI/A	Preplant	85	30	7566
12	Urea	46	GR	60	LB AI/A	Midseason			
LSD (P=.05)							1.0	2.0	575.3
Standard Deviation							0.7	1.2	398.4
CV							0.82	4.18	5.79
Replicate F							1.989	2.152	1.604
Replicate Prob(F)							0.1347	0.1401	0.2072
Treatment F							5.011	1.440	9.241
Treatment Prob(F)							0.0001	0.2241	0.0001

LSU AgCenter
Rice Research Station
Trenasse Nitrogen Validation in Water-Seeded Cultural System

Trial ID: 05-CS-06
Location: RRS-South Unit

Crop Name							Rice	Rice	Rice
Rating Date								29-Jul-2005	9-Aug-2005
Rating Data Type							50% Head	Height	Yield
Rating Unit							days	inches	lb/A
Crop Stage							Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	Urea	46	GR	90	LB AI/A	Preplant	79	30	5024
1	Urea	46	GR	0	LB AI/A	Midseason			
2	Urea	46	GR	90	LB AI/A	Preplant	79	31	5747
2	Urea	46	GR	30	LB AI/A	Midseason			
3	Urea	46	GR	90	LB AI/A	Preplant	80	31	5581
3	Urea	46	GR	60	LB AI/A	Midseason			
4	Urea	46	GR	120	LB AI/A	Preplant	80	30	5867
4	Urea	46	GR	0	LB AI/A	Midseason			
5	Urea	46	GR	120	LB AI/A	Preplant	80	30	5959
5	Urea	46	GR	30	LB AI/A	Midseason			
6	Urea	46	GR	120	LB AI/A	Preplant	80	31	6569
6	Urea	46	GR	60	LB AI/A	Midseason			
7	Urea	46	GR	150	LB AI/A	Preplant	79	31	6275
7	Urea	46	GR	0	LB AI/A	Midseason			
8	Urea	46	GR	150	LB AI/A	Preplant	80	33	6205
8	Urea	46	GR	30	LB AI/A	Midseason			
9	Urea	46	GR	150	LB AI/A	Preplant	81	31	6987
9	Urea	46	GR	60	LB AI/A	Midseason			
10	Urea	46	GR	180	LB AI/A	Preplant	81	32	6283
10	Urea	46	GR	0	LB AI/A	Midseason			
11	Urea	46	GR	180	LB AI/A	Preplant	79	31	7079
11	Urea	46	GR	30	LB AI/A	Midseason			
12	Urea	46	GR	180	LB AI/A	Preplant	81	31	6524
12	Urea	46	GR	60	LB AI/A	Midseason			
LSD (P=.05)							1.2	1.8	847.2
Standard Deviation							0.9	1.0	586.8
CV							1.08	3.36	9.5
Replicate F							1.021	0.026	0.263
Replicate Prob(F)							0.3960	0.9748	0.8514
Treatment F							2.155	1.494	3.994
Treatment Prob(F)							0.0437	0.2032	0.0010

Rice Hybrid Nitrogen Validation Experiments at the Rice Research Station

Experiment number ..... : 05-CM-08 to 05-CM-15

Site and design ..... :
- **Location/Cooperator** ..... : Rice Research Station
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** ..... : 4
- **Plot size** ..... : 7 x 20 ft
- **Row width/rows per plot** ..... : 7 in / 12

Soil type ..... : Crowley silt loam
- **% organic matter** ..... : 1.59
- **pH** ..... : 6.7
- **Extractable nutrients** ..... : P-36; K-151; Na-142; Ca-1133; Mg-252; Zn-3.9; Fe-57 ppm

Crop/Variety ..... : Rice / Multiple (See data sheet)
- **Planting method/date** ..... : Drill seeded / March 29
- **Seeding rate/depth** ..... : Hybrid, 30 lb/A; Variety, 40 seed/ft^2 / 1 in
- **Emergence date** ..... : April 10
- **Harvest date** ..... : August 11

Fertilization ..... : 275 lb/A 0-24-24, March 29; 200 lb/A 46-0-0 postharvest, August 12

Water management ..... :
- **Flush** ..... : April 8, 18, 28, May 6
- **Flood** ..... : May 16; ratoon flood, August 15
- **Drain** ..... : July 25; ratoon drain, October 11

Pest management ..... :
- **Herbicides** ..... : 0.75 oz/A Permit + 4 qt/A Stam, April 21; 15 oz/A Clincher + 1 qt/A COC, April 27; 15 oz/A Clincher + 1 oz/A Londax + 1 qt/A COC, May 13; 1 qt/A Basagran + 1 qt/A COC, June 1; 1 oz/A Permit + 1.3 oz/A Londax, June 14
- **Insecticides** ..... : 1 oz/A Icon, March 28; 2 oz/A Karate, May 25; 4 oz/A Mustang Max, July 15
- **Fungicides** ..... : None

LSU AgCenter
Rice Research Station
RiceTec XP723 Nitrogen Validation 1

Trial ID: 05-CM-08
Location: Rice Research Station

Crop Name							Rice	Rice	Rice	Rice	Rice
Rating Date								1-Aug-2005	11-Aug-2005	24-Oct-2005	
Rating Data Type							50% Head	Height	Yield	Yield	Yield
Rating Unit							days	inches	lb/A	lb/A	lb/A
Crop Stage							Main	Main	Main	Ratoon	Total
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
1	Urea	46	GR	90	LB AI/A	Preflood	83	38	8990	1032	10022
1	Urea	46	GR	0	LB AI/A	5% heading					
2	Urea	46	GR	90	LB AI/A	Preflood	83	38	10131	1377	11508
2	Urea	46	GR	30	LB AI/A	5% heading					
3	Urea	46	GR	90	LB AI/A	Preflood	83	38	10094	1248	11342
3	Urea	46	GR	60	LB AI/A	5% heading					
4	Urea	46	GR	120	LB AI/A	Preflood	85	39	11205	914	11891
4	Urea	46	GR	0	LB AI/A	5% heading					
5	Urea	46	GR	120	LB AI/A	Preflood	85	39	11189	913	11874
5	Urea	46	GR	30	LB AI/A	5% heading					
6	Urea	46	GR	120	LB AI/A	Preflood	85	38	11469	1018	12487
6	Urea	46	GR	60	LB AI/A	5% heading					
7	Urea	46	GR	120	LB AI/A	Preflood	85	39	11756	1037	13057
7	Urea	46	GR	30	LB AI/A	PD					
8	Cheniere						87	32	8197		
8	Urea	46	GR	120	LB AI/A	Preflood					
8	Urea	46	GR	30	LB AI/A	PD					
LSD (P=.05)							0.8	1.8	672.6	370.1	1044.0
Standard Deviation							0.6	1.1	457.3	245.6	699.8
CV							0.65	2.82	4.41	22.8	5.96
Replicate F							0.922	2.283	6.890	1.393	3.904
Replicate Prob(F)							0.4474	0.1386	0.0021	0.2836	0.0273
Treatment F							21.527	15.037	30.749	1.986	7.484
Treatment Prob(F)							0.0001	0.0001	0.0001	0.1316	0.0005

LSU AgCenter
Rice Research Station
RiceTec XP723 Nitrogen Validation 1

Trial ID: 05-CM-08
Location: Rice Research Station

Crop Name							Rice	Rice
Rating Date								
Rating Data Type							Head Rice	Total Mill
Rating Unit							%	%
Crop Stage							Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage		
1	Urea	46	GR	90	LB AI/A	Preflood	56	69
1	Urea	46	GR	0	LB AI/A	5% heading		
2	Urea	46	GR	90	LB AI/A	Preflood	59	70
2	Urea	46	GR	30	LB AI/A	5% heading		
3	Urea	46	GR	90	LB AI/A	Preflood	59	70
3	Urea	46	GR	60	LB AI/A	5% heading		
4	Urea	46	GR	120	LB AI/A	Preflood	56	69
4	Urea	46	GR	0	LB AI/A	5% heading		
5	Urea	46	GR	120	LB AI/A	Preflood	55	69
5	Urea	46	GR	30	LB AI/A	5% heading		
6	Urea	46	GR	120	LB AI/A	Preflood	58	69
6	Urea	46	GR	60	LB AI/A	5% heading		
7	Urea	46	GR	120	LB AI/A	Preflood	55	69
7	Urea	46	GR	30	LB AI/A	PD		
8	Cheniere						58	71
8	Urea	46	GR	120	LB AI/A	Preflood		
8	Urea	46	GR	30	LB AI/A	PD		
LSD (P=.05)							2.9	1.3
Standard Deviation							1.5	0.7
CV							2.61	1.0
Replicate F							0.652	1.957
Replicate Prob(F)							0.5500	0.2112
Treatment F							3.822	4.216
Treatment Prob(F)							0.0489	0.0385

LSU AgCenter
Rice Research Station
RiceTec XP721 Nitrogen Validation 1

Trial ID: 05-CM-09
Location: Rice Research Station

Crop Name							Rice	Rice	Rice	Rice
Rating Date								29-Jul-2005	10-Aug-2005	10-Aug-2005
Rating Data Type							50% Head	Height	Ldg-Rate	Ldg-Type
Rating Unit							days	inches	%	1-5
Crop Stage							Main	Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage				
1	Urea	46	GR	90	LB AI/A	Preflood	78	36	20	2
1	Urea	46	GR	0	LB AI/A	5% heading				
2	Urea	46	GR	90	LB AI/A	Preflood	78	36	0	0
2	Urea	46	GR	30	LB AI/A	5% heading				
3	Urea	46	GR	90	LB AI/A	Preflood	78	36	0	0
3	Urea	46	GR	60	LB AI/A	5% heading				
4	Urea	46	GR	120	LB AI/A	Preflood	78	36	25	2
4	Urea	46	GR	0	LB AI/A	5% heading				
5	Urea	46	GR	120	LB AI/A	Preflood	78	37	23	1
5	Urea	46	GR	30	LB AI/A	5% heading				
6	Urea	46	GR	120	LB AI/A	Preflood	78	37	13	1
6	Urea	46	GR	60	LB AI/A	5% heading				
7	Urea	46	GR	120	LB AI/A	Preflood	78	37	31	3
7	Urea	46	GR	30	LB AI/A	PD				
8	Cheniere						85	32	0	0
8	Urea	46	GR	120	LB AI/A	Preflood				
8	Urea	46	GR	30	LB AI/A	PD				
LSD (P=.05)							0.0	1.5	28.4	1.5
Standard Deviation							0.0	1.0	19.3	1.0
CV							0.0	2.82	138.73	109.44
Replicate F							0.000	0.741	5.913	6.132
Replicate Prob(F)							1.0000	0.5394	0.0043	0.0037
Treatment F							0.000	8.188	1.715	3.481
Treatment Prob(F)							1.0000	0.0001	0.1597	0.0123

LSU AgCenter
Rice Research Station
RiceTec XP721 Nitrogen Validation 1

Trial ID: 05-CM-09
Location: Rice Research Station

Crop Name							Rice	Rice	Rice	Rice	Rice
Rating Date							11-Aug-2005	24-Oct-2005			
Rating Data Type							Yield	Ratoon Yld	Yield	Head Rice	Total Mill
Rating Unit							lb/A	lb/A	lb/A	%	%
Crop Stage							Main	Ratoon	Total	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
1	Urea	46	GR	90	LB AI/A	Preflood	9428	1493	10921	54	69
1	Urea	46	GR	0	LB AI/A	5% heading					
2	Urea	46	GR	90	LB AI/A	Preflood	9799	1954	11753	52	68
2	Urea	46	GR	30	LB AI/A	5% heading					
3	Urea	46	GR	90	LB AI/A	Preflood	9318	2018	11336	55	70
3	Urea	46	GR	60	LB AI/A	5% heading					
4	Urea	46	GR	120	LB AI/A	Preflood	10438	1294	11732	52	68
4	Urea	46	GR	0	LB AI/A	5% heading					
5	Urea	46	GR	120	LB AI/A	Preflood	11036	1730	12766	55	69
5	Urea	46	GR	30	LB AI/A	5% heading					
6	Urea	46	GR	120	LB AI/A	Preflood	11179	2136	13315	53	68
6	Urea	46	GR	60	LB AI/A	5% heading					
7	Urea	46	GR	120	LB AI/A	Preflood	11357	1587	12944	56	70
7	Urea	46	GR	30	LB AI/A	PD					
8	Cheniere						8598			52	68
8	Urea	46	GR	120	LB AI/A	Preflood					
8	Urea	46	GR	30	LB AI/A	PD					
LSD (P=.05)							978.6	444.6	1213.9	6.4	3.6
Standard Deviation							665.3	299.2	817.1	2.6	1.5
CV							6.56	17.15	6.75	4.89	2.16
Replicate F							5.610	2.201	3.813	1.358	0.722
Replicate Prob(F)							0.0055	0.1232	0.0282	0.2881	0.4279
Treatment F							9.200	4.190	4.854	0.759	0.505
Treatment Prob(F)							0.0001	0.0083	0.0041	0.6399	0.8036

LSU AgCenter
Rice Research Station
RiceTec CL XP730 Nitrogen Validation 1

Trial ID: 05-CM-10
Location: Rice Research Station

Crop Name							Rice	Rice	Rice	Rice	Rice
Rating Date								29-Jul-2005	11-Aug-2005	24-Oct-2005	
Rating Data Type							50% Head	Height	Yield	Yield	Yield
Rating Unit							days	inches	lb/A	lb/A	lb/A
Crop Stage							Main	Main	Main	Ratoon	Total
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
1	Urea	46	GR	90	LB AI/A	Preflood	86	41	10520	1416	11582
1	Urea	46	GR	0	LB AI/A	5% heading					
2	Urea	46	GR	90	LB AI/A	Preflood	86	41	10741	1476	12217
2	Urea	46	GR	30	LB AI/A	5% heading					
3	Urea	46	GR	90	LB AI/A	Preflood	86	41	10860	1700	12560
3	Urea	46	GR	60	LB AI/A	5% heading					
4	Urea	46	GR	120	LB AI/A	Preflood	86	42	11299	1010	12309
4	Urea	46	GR	0	LB AI/A	5% heading					
5	Urea	46	GR	120	LB AI/A	Preflood	87	42	11672	1395	13067
5	Urea	46	GR	30	LB AI/A	5% heading					
6	Urea	46	GR	120	LB AI/A	Preflood	86	42	12338	1449	13788
6	Urea	46	GR	60	LB AI/A	5% heading					
7	Urea	46	GR	120	LB AI/A	Preflood	86	43	11788	1166	12662
7	Urea	46	GR	30	LB AI/A	PD					
8	Cheniere						87	32	8175		
8	Urea	46	GR	120	LB AI/A	Preflood					
8	Urea	46	GR	30	LB AI/A	PD					
LSD (P=.05)							1.0	1.9	634.8	365.9	874.2
Standard Deviation							0.7	1.1	431.6	244.1	588.4
CV							0.76	2.74	3.95	17.78	4.67
Replicate F							1.449	0.304	10.894	1.825	12.838
Replicate Prob(F)							0.2570	0.7424	0.0002	0.1832	0.0001
Treatment F							2.516	32.000	34.370	3.364	5.584
Treatment Prob(F)							0.0480	0.0001	0.0001	0.0244	0.0020

LSU AgCenter
Rice Research Station
RiceTec CL XP730 Nitrogen Validation 1

Trial ID: 05-CM-10
Location: Rice Research Station

Crop Name							Rice	Rice
Rating Date								
Rating Data Type							Head Rice	Total Mill
Rating Unit							%	%
Crop Stage							Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage		
1	Urea	46	GR	90	LB AI/A	Preflood	58	69
1	Urea	46	GR	0	LB AI/A	5% heading		
2	Urea	46	GR	90	LB AI/A	Preflood	58	69
2	Urea	46	GR	30	LB AI/A	5% heading		
3	Urea	46	GR	90	LB AI/A	Preflood	58	69
3	Urea	46	GR	60	LB AI/A	5% heading		
4	Urea	46	GR	120	LB AI/A	Preflood	56	68
4	Urea	46	GR	0	LB AI/A	5% heading		
5	Urea	46	GR	120	LB AI/A	Preflood	58	69
5	Urea	46	GR	30	LB AI/A	5% heading		
6	Urea	46	GR	120	LB AI/A	Preflood	59	69
6	Urea	46	GR	60	LB AI/A	5% heading		
7	Urea	46	GR	120	LB AI/A	Preflood	59	70
7	Urea	46	GR	30	LB AI/A	PD		
8	Cheniere						56	71
8	Urea	46	GR	120	LB AI/A	Preflood		
8	Urea	46	GR	30	LB AI/A	PD		
LSD (P=.05)							1.6	1.6
Standard Deviation							0.7	0.7
CV							1.2	0.99
Replicate F							18.568	3.330
Replicate Prob(F)							0.0035	0.1108
Treatment F							4.243	2.252
Treatment Prob(F)							0.0379	0.1531

LSU AgCenter
Rice Research Station
RiceTec XP728 Nitrogen Validation 1

Trial ID: 05-CM-11
Location: Rice Research Station

Crop Name							Rice	Rice	Rice	Rice	Rice
Rating Date								29-Jul-2005	11-Aug-2005	24-Oct-2005	
Rating Data Type							50% Head	Height	Yield	Yield	Yield
Rating Unit							days	inches	lb/A	lb/A	lb/A
Crop Stage							Main	Main	Main	Ratoon	Total
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
1	Urea	46	GR	90	LB AI/A	Preflood	84	36	10199	2803	13002
1	Urea	46	GR	0	LB AI/A	5% heading					
2	Urea	46	GR	90	LB AI/A	Preflood	84	38	10503	3289	13792
2	Urea	46	GR	30	LB AI/A	5% heading					
3	Urea	46	GR	90	LB AI/A	Preflood	84	36	10304	3399	13703
3	Urea	46	GR	60	LB AI/A	5% heading					
4	Urea	46	GR	120	LB AI/A	Preflood	85	37	11140	2601	13742
4	Urea	46	GR	0	LB AI/A	5% heading					
5	Urea	46	GR	120	LB AI/A	Preflood	84	38	11772	2733	14505
5	Urea	46	GR	30	LB AI/A	5% heading					
6	Urea	46	GR	120	LB AI/A	Preflood	85	39	11924	3475	15399
6	Urea	46	GR	60	LB AI/A	5% heading					
7	Urea	46	GR	120	LB AI/A	Preflood	84	39	12055	2489	14543
7	Urea	46	GR	30	LB AI/A	PD					
8	Cheniere						89	32	8001		
8	Urea	46	GR	120	LB AI/A	Preflood					
8	Urea	46	GR	30	LB AI/A	PD					
LSD (P=.05)							0.7	1.6	518.5	555.5	617.3
Standard Deviation							0.5	0.9	352.6	373.9	415.5
CV							0.58	2.42	3.28	12.59	2.95
Replicate F							2.800	1.296	4.686	1.080	5.041
Replicate Prob(F)							0.0650	0.3044	0.0117	0.3828	0.0104
Treatment F							59.400	18.578	56.982	4.736	14.039
Treatment Prob(F)							0.0001	0.0001	0.0001	0.0046	0.0001

LSU AgCenter
Rice Research Station
RiceTec XP728 Nitrogen Validation 1

Trial ID: 05-CM-11
Location: Rice Research Station

Crop Name							Rice	Rice
Rating Date								
Rating Data Type							Head Rice	Total Mill
Rating Unit							%	%
Crop Stage							Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage		
1	Urea	46	GR	90	LB AI/A	Preflood	39	68
1	Urea	46	GR	0	LB AI/A	5% heading		
2	Urea	46	GR	90	LB AI/A	Preflood	42	68
2	Urea	46	GR	30	LB AI/A	5% heading		
3	Urea	46	GR	90	LB AI/A	Preflood	46	69
3	Urea	46	GR	60	LB AI/A	5% heading		
4	Urea	46	GR	120	LB AI/A	Preflood	44	68
4	Urea	46	GR	0	LB AI/A	5% heading		
5	Urea	46	GR	120	LB AI/A	Preflood	45	69
5	Urea	46	GR	30	LB AI/A	5% heading		
6	Urea	46	GR	120	LB AI/A	Preflood	44	69
6	Urea	46	GR	60	LB AI/A	5% heading		
7	Urea	46	GR	120	LB AI/A	Preflood	43	68
7	Urea	46	GR	30	LB AI/A	PD		
8	Cheniere						60	72
8	Urea	46	GR	120	LB AI/A	Preflood		
8	Urea	46	GR	30	LB AI/A	PD		
LSD (P=.05)							6.3	1.4
Standard Deviation							2.7	0.6
CV							5.87	0.83
Replicate F							0.697	10.185
Replicate Prob(F)							0.4315	0.0152
Treatment F							11.252	9.060
Treatment Prob(F)							0.0025	0.0047

LSU AgCenter
Rice Research Station
RiceTec XP729 Nitrogen Validation 1

Trial ID: 05-CM-12
Location: Rice Research Station

Crop Name							Rice	Rice	Rice	Rice	Rice
Rating Date								29-Jul-2005	11-Aug-2005	24-Oct-2005	
Rating Data Type							50% Head	Height	Yield	Yield	Yield
Rating Unit							days	inches	lb/A	lb/A	lb/A
Crop Stage							Main	Main	Main	Ratoon	Total
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
1	Urea	46	GR	90	LB AI/A	Preflood	84	37	10407	1784	12191
1	Urea	46	GR	0	LB AI/A	5% heading					
2	Urea	46	GR	90	LB AI/A	Preflood	84	36	10922	2391	13313
2	Urea	46	GR	30	LB AI/A	5% heading					
3	Urea	46	GR	90	LB AI/A	Preflood	84	38	10671	2655	13327
3	Urea	46	GR	60	LB AI/A	5% heading					
4	Urea	46	GR	120	LB AI/A	Preflood	85	38	11293	1811	13104
4	Urea	46	GR	0	LB AI/A	5% heading					
5	Urea	46	GR	120	LB AI/A	Preflood	84	38	11805	2259	14064
5	Urea	46	GR	30	LB AI/A	5% heading					
6	Urea	46	GR	120	LB AI/A	Preflood	85	38	11217	2678	13894
6	Urea	46	GR	60	LB AI/A	5% heading					
7	Urea	46	GR	120	LB AI/A	Preflood	85	39	11715	1774	13489
7	Urea	46	GR	30	LB AI/A	PD					
8	Cheniere						87	33	8066		
8	Urea	46	GR	120	LB AI/A	Preflood					
8	Urea	46	GR	30	LB AI/A	PD					
LSD (P=.05)							1.1	1.2	732.1	427.8	1018.1
Standard Deviation							0.8	0.7	497.8	288.0	685.3
CV							0.9	1.81	4.63	13.13	5.14
Replicate F							3.103	1.960	2.938	0.862	1.615
Replicate Prob(F)							0.0486	0.1776	0.0569	0.4788	0.2209
Treatment F							6.278	22.400	22.868	7.885	3.167
Treatment Prob(F)							0.0005	0.0001	0.0001	0.0003	0.0267

LSU AgCenter
Rice Research Station
RiceTec XP729 Nitrogen Validation 1

Trial ID: 05-CM-12
Location: Rice Research Station

Crop Name							Rice	Rice
Rating Date								
Rating Data Type							Head Rice	Total Mill
Rating Unit							%	%
Crop Stage							Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage		
1	Urea	46	GR	90	LB AI/A	Preflood	46	68
1	Urea	46	GR	0	LB AI/A	5% heading		
2	Urea	46	GR	90	LB AI/A	Preflood	48	69
2	Urea	46	GR	30	LB AI/A	5% heading		
3	Urea	46	GR	90	LB AI/A	Preflood	50	69
3	Urea	46	GR	60	LB AI/A	5% heading		
4	Urea	46	GR	120	LB AI/A	Preflood	49	68
4	Urea	46	GR	0	LB AI/A	5% heading		
5	Urea	46	GR	120	LB AI/A	Preflood	52	69
5	Urea	46	GR	30	LB AI/A	5% heading		
6	Urea	46	GR	120	LB AI/A	Preflood	52	69
6	Urea	46	GR	60	LB AI/A	5% heading		
7	Urea	46	GR	120	LB AI/A	Preflood	53	68
7	Urea	46	GR	30	LB AI/A	PD		
8	Cheniere						59	71
8	Urea	46	GR	120	LB AI/A	Preflood		
8	Urea	46	GR	30	LB AI/A	PD		
LSD (P=.05)							2.2	1.7
Standard Deviation							0.9	0.7
CV							1.8	1.06
Replicate F							14.791	3.549
Replicate Prob(F)							0.0063	0.1016
Treatment F							37.374	3.436
Treatment Prob(F)							0.0001	0.0628

LSU AgCenter
Rice Research Station
RiceTec XP732 Nitrogen Validation 1

Trial ID: 05-CM-13
Location: Rice Research Station

Crop Name							Rice	Rice	Rice	Rice	Rice
Rating Date								1-Aug-2005	11-Aug-2005	24-Oct-2005	
Rating Data Type							50% Head	Height	Yield	Yield	Yield
Rating Unit							days	inches	lb/A	lb/A	lb/A
Crop Stage							Main	Main	Main	Ratoon	Total
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
1	Urea	46	GR	90	LB AI/A	Preflood	88	38	9947	1264	11212
1	Urea	46	GR	0	LB AI/A	5% heading					
2	Urea	46	GR	90	LB AI/A	Preflood	87	37	10198	1926	12124
2	Urea	46	GR	30	LB AI/A	5% heading					
3	Urea	46	GR	90	LB AI/A	Preflood	87	38	10412	1915	12327
3	Urea	46	GR	60	LB AI/A	5% heading					
4	Urea	46	GR	120	LB AI/A	Preflood	87	38	11672	1388	13060
4	Urea	46	GR	0	LB AI/A	5% heading					
5	Urea	46	GR	120	LB AI/A	Preflood	88	39	11828	1705	13533
5	Urea	46	GR	30	LB AI/A	5% heading					
6	Urea	46	GR	120	LB AI/A	Preflood	87	40	11949	2006	13955
6	Urea	46	GR	60	LB AI/A	5% heading					
7	Urea	46	GR	120	LB AI/A	Preflood	88	39	11410	1241	12650
7	Urea	46	GR	30	LB AI/A	PD					
8	Cheniere						92	33	7556		
8	Urea	46	GR	120	LB AI/A	Preflood					
8	Urea	46	GR	30	LB AI/A	PD					
LSD (P=.05)							1.0	1.7	827.4	531.7	1092.0
Standard Deviation							0.7	0.9	562.5	357.9	735.1
CV							0.79	2.51	5.3	21.89	5.79
Replicate F							1.098	1.159	2.773	0.280	1.743
Replicate Prob(F)							0.3718	0.3422	0.0667	0.8393	0.1941
Treatment F							21.554	13.457	27.116	3.433	6.277
Treatment Prob(F)							0.0001	0.0001	0.0001	0.0194	0.0011

LSU AgCenter
Rice Research Station
RiceTec XP732 Nitrogen Validation 1

Trial ID: 05-CM-13
Location: Rice Research Station

Crop Name							Rice	Rice
Rating Date								
Rating Data Type							Head Rice	Total Mill
Rating Unit							%	%
Crop Stage							Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage		
1	Urea	46	GR	90	LB AI/A	Preflood	51	68
1	Urea	46	GR	0	LB AI/A	5% heading		
2	Urea	46	GR	90	LB AI/A	Preflood	55	69
2	Urea	46	GR	30	LB AI/A	5% heading		
3	Urea	46	GR	90	LB AI/A	Preflood	57	70
3	Urea	46	GR	60	LB AI/A	5% heading		
4	Urea	46	GR	120	LB AI/A	Preflood	55	69
4	Urea	46	GR	0	LB AI/A	5% heading		
5	Urea	46	GR	120	LB AI/A	Preflood	55	69
5	Urea	46	GR	30	LB AI/A	5% heading		
6	Urea	46	GR	120	LB AI/A	Preflood	58	70
6	Urea	46	GR	60	LB AI/A	5% heading		
7	Urea	46	GR	120	LB AI/A	Preflood	55	69
7	Urea	46	GR	30	LB AI/A	PD		
8	Cheniere						60	71
8	Urea	46	GR	120	LB AI/A	Preflood		
8	Urea	46	GR	30	LB AI/A	PD		
LSD (P=.05)							3.6	0.6
Standard Deviation							1.5	0.3
CV							2.76	0.39
Replicate F							0.193	0.000
Replicate Prob(F)							0.6736	1.0000
Treatment F							5.320	19.150
Treatment Prob(F)							0.0212	0.0005

LSU AgCenter
Rice Research Station
RiceTec XP731 Nitrogen Validation 1

Trial ID: 05-CM-14
Location: Rice Research Station

Crop Name							Rice	Rice	Rice	Rice	Rice
Rating Date								1-Aug-2005	11-Aug-2005	24-Oct-2005	
Rating Data Type							50% Head	Height	Yield	Yield	Yield
Rating Unit							days	inches	lb/A	lb/A	lb/A
Crop Stage							Main	Main	Main	Ratoon	Total
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
1	Urea	46	GR	90	LB AI/A	Preflood	84	40	9628	937	10565
1	Urea	46	GR	0	LB AI/A	5% heading					
2	Urea	46	GR	90	LB AI/A	Preflood	84	40	10015	1246	11261
2	Urea	46	GR	30	LB AI/A	5% heading					
3	Urea	46	GR	90	LB AI/A	Preflood	84	39	10137	1506	11643
3	Urea	46	GR	60	LB AI/A	5% heading					
4	Urea	46	GR	120	LB AI/A	Preflood	84	40	10820	1129	11918
4	Urea	46	GR	0	LB AI/A	5% heading					
5	Urea	46	GR	120	LB AI/A	Preflood	84	41	10995	1177	12172
5	Urea	46	GR	30	LB AI/A	5% heading					
6	Urea	46	GR	120	LB AI/A	Preflood	85	40	11435	1523	12958
6	Urea	46	GR	60	LB AI/A	5% heading					
7	Urea	46	GR	120	LB AI/A	Preflood	85	42	10923	1031	11954
7	Urea	46	GR	30	LB AI/A	PD					
8	Cheniere						89	34	8146		
8	Urea	46	GR	120	LB AI/A	Preflood					
8	Urea	46	GR	30	LB AI/A	PD					
LSD (P=.05)							0.9	1.7	561.6	256.4	722.6
Standard Deviation							0.6	1.0	381.8	171.8	484.3
CV							0.72	2.51	3.72	14.07	4.11
Replicate F							2.935	2.842	2.374	3.989	3.834
Replicate Prob(F)							0.0570	0.0920	0.0990	0.0255	0.0289
Treatment F							40.452	15.800	29.848	6.776	9.532
Treatment Prob(F)							0.0001	0.0001	0.0001	0.0008	0.0001

LSU AgCenter
Rice Research Station
RiceTec XP731 Nitrogen Validation 1

Trial ID: 05-CM-14
Location: Rice Research Station

Crop Name							Rice	Rice
Rating Date								
Rating Data Type							Head Rice	Total Mill
Rating Unit							%	%
Crop Stage							Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage		
1	Urea	46	GR	90	LB AI/A	Preflood	52	69
1	Urea	46	GR	0	LB AI/A	5% heading		
2	Urea	46	GR	90	LB AI/A	Preflood	54	70
2	Urea	46	GR	30	LB AI/A	5% heading		
3	Urea	46	GR	90	LB AI/A	Preflood	52	70
3	Urea	46	GR	60	LB AI/A	5% heading		
4	Urea	46	GR	120	LB AI/A	Preflood	54	70
4	Urea	46	GR	0	LB AI/A	5% heading		
5	Urea	46	GR	120	LB AI/A	Preflood	55	70
5	Urea	46	GR	30	LB AI/A	5% heading		
6	Urea	46	GR	120	LB AI/A	Preflood	56	70
6	Urea	46	GR	60	LB AI/A	5% heading		
7	Urea	46	GR	120	LB AI/A	Preflood	56	70
7	Urea	46	GR	30	LB AI/A	PD		
8	Cheniere						60	72
8	Urea	46	GR	120	LB AI/A	Preflood		
8	Urea	46	GR	30	LB AI/A	PD		
LSD (P=.05)							2.3	0.5
Standard Deviation							1.0	0.2
CV							1.8	0.32
Replicate F							6.808	5.122
Replicate Prob(F)							0.0350	0.0581
Treatment F							14.018	20.891
Treatment Prob(F)							0.0012	0.0003

LSU AgCenter
Rice Research Station
RiceTec XP716 Nitrogen Validation 1

Trial ID: 05-CM-15
Location: Rice Research Station

Crop Name							Rice	Rice	Rice	Rice	Rice
Rating Date								1-Aug-2005	11-Aug-2005	24-Oct-2005	
Rating Data Type							50% Head	Height	Yield	Yield	Yield
Rating Unit							days	inches	lb/A	lb/A	lb/A
Crop Stage							Main	Main	Main	Ratoon	Total
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
1	Urea	46	GR	90	LB AI/A	Preflood	87	39	8678	1847	10525
1	Urea	46	GR	0	LB AI/A	5% heading					
2	Urea	46	GR	90	LB AI/A	Preflood	87	39	9070	2352	11422
2	Urea	46	GR	30	LB AI/A	5% heading					
3	Urea	46	GR	90	LB AI/A	Preflood	87	39	8853	1960	10812
3	Urea	46	GR	60	LB AI/A	5% heading					
4	Urea	46	GR	120	LB AI/A	Preflood	88	40	10079	1971	12050
4	Urea	46	GR	0	LB AI/A	5% heading					
5	Urea	46	GR	120	LB AI/A	Preflood	88	42	9731	2120	11850
5	Urea	46	GR	30	LB AI/A	5% heading					
6	Urea	46	GR	120	LB AI/A	Preflood	88	40	9996	2278	12274
6	Urea	46	GR	60	LB AI/A	5% heading					
7	Urea	46	GR	120	LB AI/A	Preflood	88	41	9953	1892	11844
7	Urea	46	GR	30	LB AI/A	PD					
8	Bengal						86	32	8473		
8	Urea	46	GR	120	LB AI/A	Preflood					
8	Urea	46	GR	30	LB AI/A	PD					
LSD (P=.05)							0.5	1.7	642.5	266.1	749.3
Standard Deviation							0.4	1.0	436.8	179.1	504.4
CV							0.41	2.45	4.67	8.7	4.37
Replicate F							1.909	0.320	10.024	0.654	7.991
Replicate Prob(F)							0.1591	0.7311	0.0003	0.5906	0.0014
Treatment F							11.455	29.118	8.991	4.738	6.713
Treatment Prob(F)							0.0001	0.0001	0.0001	0.0046	0.0007

LSU AgCenter
Rice Research Station
RiceTec XP716 Nitrogen Validation 1

Trial ID: 05-CM-15
Location: Rice Research Station

Crop Name							Rice	Rice
Rating Date								
Rating Data Type							Head Rice	Total Mill
Rating Unit							%	%
Crop Stage							Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage		
1	Urea	46	GR	90	LB AI/A	Preflood	62	70
1	Urea	46	GR	0	LB AI/A	5% heading		
2	Urea	46	GR	90	LB AI/A	Preflood	64	70
2	Urea	46	GR	30	LB AI/A	5% heading		
3	Urea	46	GR	90	LB AI/A	Preflood	64	70
3	Urea	46	GR	60	LB AI/A	5% heading		
4	Urea	46	GR	120	LB AI/A	Preflood	63	70
4	Urea	46	GR	0	LB AI/A	5% heading		
5	Urea	46	GR	120	LB AI/A	Preflood	64	70
5	Urea	46	GR	30	LB AI/A	5% heading		
6	Urea	46	GR	120	LB AI/A	Preflood	65	70
6	Urea	46	GR	60	LB AI/A	5% heading		
7	Urea	46	GR	120	LB AI/A	Preflood	64	70
7	Urea	46	GR	30	LB AI/A	PD		
8	Bengal						67	72
8	Urea	46	GR	120	LB AI/A	Preflood		
8	Urea	46	GR	30	LB AI/A	PD		
LSD (P=.05)							1.9	0.7
Standard Deviation							0.8	0.3
CV							1.23	0.41
Replicate F							3.094	8.075
Replicate Prob(F)							0.1220	0.0250
Treatment F							7.034	19.000
Treatment Prob(F)							0.0098	0.0005

Rice Hybrid Nitrogen Validation Experiments at Richland Parish

Experiment number ..... : 05-RP-08 to 05-RP-15

Site and design ..... :
- **Location/Cooperator** ..... : Richland Parish / Woodsland Plantation
- **Tillage type** ..... : Fall stale seedbed
- **Experimental design** ..... : Randomized complete block
- **Number of reps** ..... : 4
- **Plot size** ..... : 7 x 20 ft
- **Row width/rows per plot** ..... : 7 in / 12

Soil type ..... : Hebert silty clay
- **% organic matter** ..... : 2.72
- **pH** ..... : 7.0
- **Extractable nutrients** ..... : P-111; K-183; Na-286; Ca-2905; Mg-721; Zn-1.1; Fe-130 ppm

Crop/Variety ..... : Rice / Multiple (See data sheet)
- **Planting method/date** ..... : Drill seeded / May 5
- **Seeding rate/depth** ..... : Hybrid, 30 lb/A; Variety, 40 seed/ft^2 / 0.75 in
- **Emergence date** ..... : May 12
- **Harvest date** ..... : September 14

Fertilization ..... : NA

Water management ..... :
- **Flush** ..... : May 14
- **Flood** ..... : June 15
- **Drain** ..... : September 1

Pest management ..... :
- **Herbicides** ..... : 16 oz/A Command + 21 oz/A Touchdown + 16 oz/A Preference (surfactant), May 6; 1 gal/A Duet + 10.6 oz/A Grandstand + 1 qt/A COC, June 4; 15 oz/A Clincher + 1 qt/A COC, June 23
- **Insecticides** ..... : 1.8 oz/A Karate, June 11 and July 23
- **Fungicides** ..... : 14 oz/A Quilt, July 23

LSU AgCenter
Rice Research Station
RiceTec XP723 Nitrogen Validation 2

Trial ID: 05-RP-08
Location: Richland Parish

Crop Name							Rice	Rice	Rice	Rice	Rice
Rating Date								15-Sep-2005	15-Sep-2005		
Rating Data Type							50% Head	Height	Yield	Head Rice	Total Mill
Rating Unit							days	inches	lb/A	%	%
Crop Stage							Main	Main	Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
1	Urea	46	GR	90	LB AI/A	Preflood	76	42	9660	60	71
1	Urea	46	GR	0	LB AI/A	5% heading					
2	Urea	46	GR	90	LB AI/A	Preflood	76	40	10269	60	71
2	Urea	46	GR	30	LB AI/A	5% heading					
3	Urea	46	GR	90	LB AI/A	Preflood	76	41	10631	61	72
3	Urea	46	GR	60	LB AI/A	5% heading					
4	Urea	46	GR	120	LB AI/A	Preflood	77	41	11444	59	71
4	Urea	46	GR	0	LB AI/A	5% heading					
5	Urea	46	GR	120	LB AI/A	Preflood	76	42	11136	61	72
5	Urea	46	GR	30	LB AI/A	5% heading					
6	Urea	46	GR	120	LB AI/A	Preflood	76	42	11397	62	72
6	Urea	46	GR	60	LB AI/A	5% heading					
7	Urea	46	GR	120	LB AI/A	Preflood	76	41	11906	58	72
7	Urea	46	GR	30	LB AI/A	PD					
8	Cheniere						82	32	8962	59	71
8	Urea	46	GR	120	LB AI/A	Preflood					
8	Urea	46	GR	30	LB AI/A	PD					
LSD (P=.05)							0.9	2.7	949.6	2.6	1.0
Standard Deviation							0.6	1.5	645.6	1.1	0.4
CV							0.77	3.85	6.05	1.84	0.57
Replicate F							7.483	6.965	5.799	2.179	0.253
Replicate Prob(F)							0.0014	0.0080	0.0047	0.1834	0.6301
Treatment F							53.379	14.481	9.559	2.583	2.028
Treatment Prob(F)							0.0001	0.0001	0.0001	0.1169	0.1857

LSU AgCenter
Rice Research Station
RiceTec XP721 Nitrogen Validation 2

Trial ID: 05-RP-09
Location: Richland Parish

Crop Name							Rice	Rice	Rice	Rice
Rating Date								15-Sep-2005	15-Sep-2005	15-Sep-2005
Rating Data Type							50% Head	Height	Ldg-Rate	Ldg-Type
Rating Unit							days	inches	%	1-5
Crop Stage							Main	Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage				
1	Urea	46	GR	90	LB AI/A	Preflood	69	38	35	1
1	Urea	46	GR	0	LB AI/A	5% heading				
2	Urea	46	GR	90	LB AI/A	Preflood	69	39	50	1
2	Urea	46	GR	30	LB AI/A	5% heading				
3	Urea	46	GR	90	LB AI/A	Preflood	70	38	40	2
3	Urea	46	GR	60	LB AI/A	5% heading				
4	Urea	46	GR	120	LB AI/A	Preflood	70	37	40	2
4	Urea	46	GR	0	LB AI/A	5% heading				
5	Urea	46	GR	120	LB AI/A	Preflood	69	37	70	2
5	Urea	46	GR	30	LB AI/A	5% heading				
6	Urea	46	GR	120	LB AI/A	Preflood	69	37	85	2
6	Urea	46	GR	60	LB AI/A	5% heading				
7	Urea	46	GR	120	LB AI/A	Preflood	69	38	75	2
7	Urea	46	GR	30	LB AI/A	PD				
8	Cheniere						81	32		
8	Urea	46	GR	120	LB AI/A	Preflood				
8	Urea	46	GR	30	LB AI/A	PD				
LSD (P=.05)							1.3	1.4	31.6	1.0
Standard Deviation							0.9	0.8	12.9	0.4
CV							1.23	2.09	22.88	25.98
Replicate F							52.521	2.980	2.100	0.000
Replicate Prob(F)							0.0001	0.0835	0.1975	1.0000
Treatment F							90.572	23.040	4.771	2.429
Treatment Prob(F)							0.0001	0.0001	0.0394	0.1522

LSU AgCenter
Rice Research Station
RiceTec XP721 Nitrogen Validation 2

Trial ID: 05-RP-09
Location: Richland Parish

Crop Name							Rice	Rice	Rice
Rating Date							15-Sep-2005		
Rating Data Type							Yield	Head Rice	Total Mill
Rating Unit							lb/A	%	%
Crop Stage							Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	Urea	46	GR	90	LB AI/A	Preflood	9259	55	69
1	Urea	46	GR	0	LB AI/A	5% heading			
2	Urea	46	GR	90	LB AI/A	Preflood	10159	55	69
2	Urea	46	GR	30	LB AI/A	5% heading			
3	Urea	46	GR	90	LB AI/A	Preflood	9865	56	69
3	Urea	46	GR	60	LB AI/A	5% heading			
4	Urea	46	GR	120	LB AI/A	Preflood	10010	55	69
4	Urea	46	GR	0	LB AI/A	5% heading			
5	Urea	46	GR	120	LB AI/A	Preflood	10478	55	69
5	Urea	46	GR	30	LB AI/A	5% heading			
6	Urea	46	GR	120	LB AI/A	Preflood	10234	58	70
6	Urea	46	GR	60	LB AI/A	5% heading			
7	Urea	46	GR	120	LB AI/A	Preflood	10202	57	70
7	Urea	46	GR	30	LB AI/A	PD			
8	Cheniere						8857	59	71
8	Urea	46	GR	120	LB AI/A	Preflood			
8	Urea	46	GR	30	LB AI/A	PD			
LSD (P=.05)							828.5	3.6	1.1
Standard Deviation							563.3	1.5	0.5
CV							5.7	2.72	0.69
Replicate F							12.383	0.235	0.000
Replicate Prob(F)							0.0001	0.6429	1.0000
Treatment F							3.805	2.404	7.220
Treatment Prob(F)							0.0080	0.1350	0.0091

LSU AgCenter
Rice Research Station
RiceTec CL XP730 Nitrogen Validation 2

Trial ID: 05-RP-10
Location: Richland Parish

Crop Name							Rice	Rice	Rice	Rice	Rice
Rating Date								15-Sep-2005	15-Sep-2005		
Rating Data Type							50% Head	Height	Yield	Head Rice	Total Mill
Rating Unit							days	inches	lb/A	%	%
Crop Stage							Main	Main	Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
1	Urea	46	GR	90	LB AI/A	Preflood	77	44	10159	57	70
1	Urea	46	GR	0	LB AI/A	5% heading					
2	Urea	46	GR	90	LB AI/A	Preflood	76	43	11079	58	71
2	Urea	46	GR	30	LB AI/A	5% heading					
3	Urea	46	GR	90	LB AI/A	Preflood	76	42	10793	62	72
3	Urea	46	GR	60	LB AI/A	5% heading					
4	Urea	46	GR	120	LB AI/A	Preflood	78	43	11318	59	72
4	Urea	46	GR	0	LB AI/A	5% heading					
5	Urea	46	GR	120	LB AI/A	Preflood	78	44	11227	60	72
5	Urea	46	GR	30	LB AI/A	5% heading					
6	Urea	46	GR	120	LB AI/A	Preflood	77	45	11039	62	72
6	Urea	46	GR	60	LB AI/A	5% heading					
7	Urea	46	GR	120	LB AI/A	Preflood	77	45	11677	61	72
7	Urea	46	GR	30	LB AI/A	PD					
8	Cheniere						81	33	9798	60	71
8	Urea	46	GR	120	LB AI/A	Preflood					
8	Urea	46	GR	30	LB AI/A	PD					
LSD (P=.05)							1.1	2.2	1193.0	2.9	1.0
Standard Deviation							0.7	1.3	811.1	1.2	0.4
CV							0.95	3.05	7.45	2.04	0.58
Replicate F							28.748	0.480	1.300	20.018	14.992
Replicate Prob(F)							0.0001	0.6285	0.3006	0.0029	0.0061
Treatment F							20.441	28.130	2.353	4.421	4.115
Treatment Prob(F)							0.0001	0.0001	0.0610	0.0342	0.0409

LSU AgCenter
Rice Research Station
RiceTec XP728 Nitrogen Validation 2

Trial ID: 05-RP-11
Location: Richland Parish

Crop Name							Rice	Rice	Rice	Rice
Rating Date								15-Sep-2005	15-Sep-2005	15-Sep-2005
Rating Data Type							50% Head	Height	Ldg-Rate	Ldg-Type
Rating Unit							days	inches	%	1-5
Crop Stage							Main	Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage				
1	Urea	46	GR	90	LB AI/A	Preflood	76	41		
1	Urea	46	GR	0	LB AI/A	5% heading				
2	Urea	46	GR	90	LB AI/A	Preflood	75	41	30	2
2	Urea	46	GR	30	LB AI/A	5% heading				
3	Urea	46	GR	90	LB AI/A	Preflood	76	40		
3	Urea	46	GR	60	LB AI/A	5% heading				
4	Urea	46	GR	120	LB AI/A	Preflood	76	40		
4	Urea	46	GR	0	LB AI/A	5% heading				
5	Urea	46	GR	120	LB AI/A	Preflood	77	42	50	2
5	Urea	46	GR	30	LB AI/A	5% heading				
6	Urea	46	GR	120	LB AI/A	Preflood	77	42	35	2
6	Urea	46	GR	60	LB AI/A	5% heading				
7	Urea	46	GR	120	LB AI/A	Preflood	77	42	60	2
7	Urea	46	GR	30	LB AI/A	PD				
8	Cheniere						82	33		
8	Urea	46	GR	120	LB AI/A	Preflood				
8	Urea	46	GR	30	LB AI/A	PD				
LSD (P=.05)							0.9	2.0	28.6	2.9
Standard Deviation							0.6	1.1	11.0	1.1
CV							0.81	2.84	25.13	58.63
Replicate F							26.257	6.419	5.328	0.362
Replicate Prob(F)							0.0001	0.0105	0.1030	0.7230
Treatment F							50.103	20.700	4.707	0.155
Treatment Prob(F)							0.0001	0.0001	0.1178	0.9199

LSU AgCenter
Rice Research Station
RiceTec XP728 Nitrogen Validation 2

Trial ID: 05-RP-11
Location: Richland Parish

Crop Name							Rice	Rice	Rice
Rating Date							15-Sep-2005		
Rating Data Type							Yield	Head Rice	Total Mill
Rating Unit							lb/A	%	%
Crop Stage							Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	Urea	46	GR	90	LB AI/A	Preflood	11334	54	69
1	Urea	46	GR	0	LB AI/A	5% heading			
2	Urea	46	GR	90	LB AI/A	Preflood	11157	54	70
2	Urea	46	GR	30	LB AI/A	5% heading			
3	Urea	46	GR	90	LB AI/A	Preflood	11428	56	70
3	Urea	46	GR	60	LB AI/A	5% heading			
4	Urea	46	GR	120	LB AI/A	Preflood	11171	55	70
4	Urea	46	GR	0	LB AI/A	5% heading			
5	Urea	46	GR	120	LB AI/A	Preflood	11508	55	71
5	Urea	46	GR	30	LB AI/A	5% heading			
6	Urea	46	GR	120	LB AI/A	Preflood	11864	58	71
6	Urea	46	GR	60	LB AI/A	5% heading			
7	Urea	46	GR	120	LB AI/A	Preflood	12246	57	71
7	Urea	46	GR	30	LB AI/A	PD			
8	Cheniere						9576	62	72
8	Urea	46	GR	120	LB AI/A	Preflood			
8	Urea	46	GR	30	LB AI/A	PD			
LSD (P=.05)							950.4	2.6	0.8
Standard Deviation							646.2	1.1	0.3
CV							5.73	1.97	0.46
Replicate F							0.876	0.386	0.000
Replicate Prob(F)							0.4694	0.5539	1.0000
Treatment F							5.859	11.702	15.133
Treatment Prob(F)							0.0007	0.0022	0.0010

LSU AgCenter
Rice Research Station
RiceTec XP729 Nitrogen Validation 2

Trial ID: 05-RP-12
Location: Richland Parish

Crop Name							Rice	Rice	Rice	Rice
Rating Date								15-Sep-2005	15-Sep-2005	15-Sep-2005
Rating Data Type							50% Head	Height	Ldg-Rate	Ldg-Type
Rating Unit							days	inches	%	1-5
Crop Stage							Main	Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage				
1	Urea	46	GR	90	LB AI/A	Preflood	75	38	.	.
1	Urea	46	GR	0	LB AI/A	5% heading				
2	Urea	46	GR	90	LB AI/A	Preflood	75	39	.	.
2	Urea	46	GR	30	LB AI/A	5% heading				
3	Urea	46	GR	90	LB AI/A	Preflood	75	40	.	.
3	Urea	46	GR	60	LB AI/A	5% heading				
4	Urea	46	GR	120	LB AI/A	Preflood	76	40	.	.
4	Urea	46	GR	0	LB AI/A	5% heading				
5	Urea	46	GR	120	LB AI/A	Preflood	75	39	.	.
5	Urea	46	GR	30	LB AI/A	5% heading				
6	Urea	46	GR	120	LB AI/A	Preflood	76	40	.	.
6	Urea	46	GR	60	LB AI/A	5% heading				
7	Urea	46	GR	120	LB AI/A	Preflood	76	40	40	2
7	Urea	46	GR	30	LB AI/A	PD				
8	Cheniere						81	33	.	.
8	Urea	46	GR	120	LB AI/A	Preflood				
8	Urea	46	GR	30	LB AI/A	PD				
LSD (P=.05)							1.2	1.7	.	.
Standard Deviation							0.8	0.9	.	.
CV							1.09	2.42	.	.
Replicate F							21.895	0.469		
Replicate Prob(F)							0.0001	0.6374		
Treatment F							21.176	20.824		
Treatment Prob(F)							0.0001	0.0001		

LSU AgCenter
Rice Research Station
RiceTec XP729 Nitrogen Validation 2

Trial ID: 05-RP-12
Location: Richland Parish

Crop Name							Rice	Rice	Rice
Rating Date							15-Sep-2005		
Rating Data Type							Yield	Head Rice	Total Mill
Rating Unit							lb/A	%	%
Crop Stage							Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	Urea	46	GR	90	LB AI/A	Preflood	10260	59	70
1	Urea	46	GR	0	LB AI/A	5% heading			
2	Urea	46	GR	90	LB AI/A	Preflood	11050	58	70
2	Urea	46	GR	30	LB AI/A	5% heading			
3	Urea	46	GR	90	LB AI/A	Preflood	10552	60	71
3	Urea	46	GR	60	LB AI/A	5% heading			
4	Urea	46	GR	120	LB AI/A	Preflood	11928	58	71
4	Urea	46	GR	0	LB AI/A	5% heading			
5	Urea	46	GR	120	LB AI/A	Preflood	11345	59	71
5	Urea	46	GR	30	LB AI/A	5% heading			
6	Urea	46	GR	120	LB AI/A	Preflood	11438	58	71
6	Urea	46	GR	60	LB AI/A	5% heading			
7	Urea	46	GR	120	LB AI/A	Preflood	11824	59	72
7	Urea	46	GR	30	LB AI/A	PD			
8	Cheniere						9862	62	72
8	Urea	46	GR	120	LB AI/A	Preflood			
8	Urea	46	GR	30	LB AI/A	PD			
LSD (P=.05)							779.8	2.6	1.5
Standard Deviation							524.9	1.1	0.6
CV							4.76	1.89	0.88
Replicate F							2.332	0.026	0.184
Replicate Prob(F)							0.1084	0.8757	0.6807
Treatment F							8.063	2.390	1.584
Treatment Prob(F)							0.0002	0.1365	0.2795

LSU AgCenter
Rice Research Station
RiceTec XP732 Nitrogen Validation 2

Trial ID: 05-RP-13
Location: Richland Parish

Crop Name							Rice	Rice	Rice	Rice
Rating Date								15-Sep-2005	15-Sep-2005	15-Sep-2005
Rating Data Type							50% Head	Height	Ldg-Rate	Ldg-Type
Rating Unit							days	inches	%	1-5
Crop Stage							Main	Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage				
1	Urea	46	GR	90	LB AI/A	Preflood	75	40		
1	Urea	46	GR	0	LB AI/A	5% heading				
2	Urea	46	GR	90	LB AI/A	Preflood	74	42		
2	Urea	46	GR	30	LB AI/A	5% heading				
3	Urea	46	GR	90	LB AI/A	Preflood	75	42	70	2
3	Urea	46	GR	60	LB AI/A	5% heading				
4	Urea	46	GR	120	LB AI/A	Preflood	76	42	25	1
4	Urea	46	GR	0	LB AI/A	5% heading				
5	Urea	46	GR	120	LB AI/A	Preflood	76	42	20	1
5	Urea	46	GR	30	LB AI/A	5% heading				
6	Urea	46	GR	120	LB AI/A	Preflood	75	42		
6	Urea	46	GR	60	LB AI/A	5% heading				
7	Urea	46	GR	120	LB AI/A	Preflood	76	42	45	2
7	Urea	46	GR	30	LB AI/A	PD				
8	Cheniere						81	32		
8	Urea	46	GR	120	LB AI/A	Preflood				
8	Urea	46	GR	30	LB AI/A	PD				
LSD (P=.05)							1.0	2.1	269.5	7.8
Standard Deviation							0.7	1.2	21.2	0.6
CV							0.91	3.0	53.03	44.54
Replicate F							36.634	6.377	0.111	0.333
Replicate Prob(F)							0.0001	0.0107	0.7952	0.6667
Treatment F							35.271	23.931	2.296	1.222
Treatment Prob(F)							0.0001	0.0001	0.4435	0.5676

LSU AgCenter
Rice Research Station
RiceTec XP732 Nitrogen Validation 2

Trial ID: 05-RP-13
Location: Richland Parish

Crop Name							Rice	Rice	Rice
Rating Date							15-Sep-2005		
Rating Data Type							Yield	Head Rice	Total Mill
Rating Unit							lb/A	%	%
Crop Stage							Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	Urea	46	GR	90	LB AI/A	Preflood	10897	57	71
1	Urea	46	GR	0	LB AI/A	5% heading			
2	Urea	46	GR	90	LB AI/A	Preflood	10796	59	71
2	Urea	46	GR	30	LB AI/A	5% heading			
3	Urea	46	GR	90	LB AI/A	Preflood	11290	60	72
3	Urea	46	GR	60	LB AI/A	5% heading			
4	Urea	46	GR	120	LB AI/A	Preflood	12179	59	71
4	Urea	46	GR	0	LB AI/A	5% heading			
5	Urea	46	GR	120	LB AI/A	Preflood	11520	60	71
5	Urea	46	GR	30	LB AI/A	5% heading			
6	Urea	46	GR	120	LB AI/A	Preflood	11781	60	71
6	Urea	46	GR	60	LB AI/A	5% heading			
7	Urea	46	GR	120	LB AI/A	Preflood	12034	58	71
7	Urea	46	GR	30	LB AI/A	PD			
8	Cheniere						9526	60	72
8	Urea	46	GR	120	LB AI/A	Preflood			
8	Urea	46	GR	30	LB AI/A	PD			
LSD (P=.05)							1322.2	4.5	1.4
Standard Deviation							899.0	1.8	0.6
CV							7.99	3.1	0.82
Replicate F							0.733	0.222	3.725
Replicate Prob(F)							0.5439	0.6544	0.1018
Treatment F							3.633	0.631	0.911
Treatment Prob(F)							0.0101	0.7208	0.5534

LSU AgCenter
Rice Research Station
RiceTec XP731 Nitrogen Validation 2

Trial ID: 05-RP-14
Location: Richland Parish

Crop Name							Rice	Rice	Rice	Rice
Rating Date								15-Sep-2005	15-Sep-2005	15-Sep-2005
Rating Data Type							50% Head	Height	Ldg. Rate	Ldg. Type
Rating Unit							days	inches	%	1-5
Crop Stage							Main	Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage				
1	Urea	46	GR	90	LB AI/A	Preflood	76	42	40	1
1	Urea	46	GR	0	LB AI/A	5% heading				
2	Urea	46	GR	90	LB AI/A	Preflood	76	43	30	1
2	Urea	46	GR	30	LB AI/A	5% heading				
3	Urea	46	GR	90	LB AI/A	Preflood	76	42	30	1
3	Urea	46	GR	60	LB AI/A	5% heading				
4	Urea	46	GR	120	LB AI/A	Preflood	77	42	30	1
4	Urea	46	GR	0	LB AI/A	5% heading				
5	Urea	46	GR	120	LB AI/A	Preflood	77	43	40	1
5	Urea	46	GR	30	LB AI/A	5% heading				
6	Urea	46	GR	120	LB AI/A	Preflood	77	42	55	1
6	Urea	46	GR	60	LB AI/A	5% heading				
7	Urea	46	GR	120	LB AI/A	Preflood	77	43	45	2
7	Urea	46	GR	30	LB AI/A	PD				
8	Cheniere						82	32		
8	Urea	46	GR	120	LB AI/A	Preflood				
8	Urea	46	GR	30	LB AI/A	PD				
LSD (P=.05)							1.3	1.7	447.9	8.3
Standard Deviation							0.9	1.0	35.3	0.7
CV							1.16	2.32	91.4	61.1
Replicate F							23.329	8.007	0.368	0.167
Replicate Prob(F)							0.0001	0.0048	0.6529	0.7532
Treatment F							22.619	42.667	0.144	0.167
Treatment Prob(F)							0.0001	0.0001	0.9614	0.9502

LSU AgCenter
Rice Research Station
RiceTec XP731 Nitrogen Validation 2

Trial ID: 05-RP-14
Location: Richland Parish

Crop Name							Rice	Rice	Rice
Rating Date							15-Sep-2005		
Rating Data Type							Yield	Head Rice	Total Mill
Rating Unit							lb/A	%	%
Crop Stage							Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	Urea	46	GR	90	LB AI/A	Preflood	11015	58	72
1	Urea	46	GR	0	LB AI/A	5% heading			
2	Urea	46	GR	90	LB AI/A	Preflood	11314	58	72
2	Urea	46	GR	30	LB AI/A	5% heading			
3	Urea	46	GR	90	LB AI/A	Preflood	10679	59	71
3	Urea	46	GR	60	LB AI/A	5% heading			
4	Urea	46	GR	120	LB AI/A	Preflood	11657	58	71
4	Urea	46	GR	0	LB AI/A	5% heading			
5	Urea	46	GR	120	LB AI/A	Preflood	11263	60	72
5	Urea	46	GR	30	LB AI/A	5% heading			
6	Urea	46	GR	120	LB AI/A	Preflood	11430	59	72
6	Urea	46	GR	60	LB AI/A	5% heading			
7	Urea	46	GR	120	LB AI/A	Preflood	11802	58	72
7	Urea	46	GR	30	LB AI/A	PD			
8	Cheniere						9344	62	72
8	Urea	46	GR	120	LB AI/A	Preflood			
8	Urea	46	GR	30	LB AI/A	PD			
LSD (P=.05)							850.2	4.9	0.6
Standard Deviation							578.0	2.1	0.3
CV							5.23	3.54	0.35
Replicate F							2.425	4.740	0.174
Replicate Prob(F)							0.0942	0.0659	0.6893
Treatment F							7.252	0.975	2.609
Treatment Prob(F)							0.0002	0.5130	0.1145

LSU AgCenter
Rice Research Station
RiceTec XP716 Nitrogen Validation 2

Trial ID: 05-RP-15
Location: Richland Parish

Crop Name							Rice	Rice	Rice	Rice	Rice
Rating Date								15-Sep-2005	15-Sep-2005		
Rating Data Type							50% Head	Height	Yield	Head Rice	Total Mill
Rating Unit							days	inches	lb/A	%	%
Crop Stage							Main	Main	Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
1	Urea	46	GR	90	LB AI/A	Preflood	79	42	10392	67	72
1	Urea	46	GR	0	LB AI/A	5% heading					
2	Urea	46	GR	90	LB AI/A	Preflood	79	42	10716	67	71
2	Urea	46	GR	30	LB AI/A	5% heading					
3	Urea	46	GR	90	LB AI/A	Preflood	79	44	9861	67	71
3	Urea	46	GR	60	LB AI/A	5% heading					
4	Urea	46	GR	120	LB AI/A	Preflood	80	44	11276	67	71
4	Urea	46	GR	0	LB AI/A	5% heading					
5	Urea	46	GR	120	LB AI/A	Preflood	80	45	10247	67	71
5	Urea	46	GR	30	LB AI/A	5% heading					
6	Urea	46	GR	120	LB AI/A	Preflood	80	45	11159	69	72
6	Urea	46	GR	60	LB AI/A	5% heading					
7	Urea	46	GR	120	LB AI/A	Preflood	80	45	11594	66	71
7	Urea	46	GR	30	LB AI/A	PD					
8	Bengal						77	31	9621	69	74
8	Urea	46	GR	120	LB AI/A	Preflood					
8	Urea	46	GR	30	LB AI/A	PD					
LSD (P=.05)							1.0	2.1	1251.9	3.2	0.6
Standard Deviation							0.7	1.2	851.2	1.3	0.2
CV							0.82	2.88	8.02	1.97	0.32
Replicate F							11.141	15.265	1.129	0.152	1.677
Replicate Prob(F)							0.0001	0.0003	0.3601	0.7103	0.2429
Treatment F							11.789	46.506	2.716	1.232	36.660
Treatment Prob(F)							0.0001	0.0001	0.0359	0.4077	0.0002

Ratoon Response of Rice Hybrids to Nitrogen Fertilizer Rates

Experiment number ..... : 05-CM-25

Site and design ..... :
- **Location/Cooperator** ..... : Rice Research Station
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** ..... : 4
- **Plot size** ..... : 7 x 20 ft
- **Row width/rows per plot** ..... : 7 in / 12

Soil type ..... : Crowley silt loam
- **% organic matter** ..... : 1.53
- **pH** ..... : 7.0
- **Extractable nutrients** ..... : P-52; K-111; Na-120; Ca-1216; Mg-234; Zn-4.3; Fe-69 ppm

Crop/Variety ..... : Rice / XP723, XP721
- **Planting method/date** ..... : Drill seeded / March 29
- **Seeding rate/depth** ..... : 30 lb/A / 1 in
- **Emergence date** ..... : April 11
- **Harvest date** ..... : August 10

Fertilization ..... : 275 lb/A 0-24-24, March 29; 360 lb/A 46-0-0 preflood, May 13

Water management ..... :
- **Flush** ..... : April 8, 18, 28, May 6
- **Flood** ..... : May 16; ratoon flood, August 15
- **Drain** ..... : July 29; ratoon drain, October 17

Pest management ..... :
- **Herbicides** ..... : 0.75 oz/A Permit + 4 qt/A Stam, April 21; 15 oz/A Clincher + 1 qt/A COC, April 27; 15 oz/A Clincher + 1 oz/A Londax + 1 qt/A COC, May 13; 1 qt/A Basagran + 1 qt/A COC, June 1; 1 oz/A Permit + 1.3 oz/A Londax, June 14
- **Insecticides** ..... : 1 oz/A Icon, March 28; 2 oz/A Karate, May 25; 4 oz/A Mustang Max, July 15
- **Fungicides** ..... : None

LSU AgCenter
Rice Research Station
Ratoon Response of Rice Hybrids to Nitrogen Fertilizer Rates

Trial ID: 05-CM-25
Location: Rice Research Station

Crop Name							Rice	Rice	Rice	Rice
Rating Date								2-Aug-2005	10-Aug-2005	10-Aug-2005
Rating Data Type							50% Head	Height	Ldg-Rate	Ldg-Type
Rating Unit							days	inches	%	1-5
Crop Stage							Main	Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage				
1	XP723						85	40	0	0
1	Urea	46	GR	60	LB AI/A	Postharvest				
2	XP723						85	39	0	0
2	Urea	46	GR	90	LB AI/A	Postharvest				
3	XP723						85	39	0	0
3	Urea	46	GR	120	LB AI/A	Postharvest				
4	XP723						86	39	0	0
4	Urea	46	GR	150	LB AI/A	Postharvest				
5	XP721						79	37	25	2
5	Urea	46	GR	60	LB AI/A	Postharvest				
6	XP721						79	37	23	2
6	Urea	46	GR	90	LB AI/A	Postharvest				
7	XP721						79	37	31	3
7	Urea	46	GR	120	LB AI/A	Postharvest				
8	XP721						79	36	20	2
8	Urea	46	GR	150	LB AI/A	Postharvest				
LSD (P=.05)							1.0	1.2	16.6	0.7
Standard Deviation							0.7	0.7	11.3	0.5
CV							0.79	1.83	91.61	54.68
Replicate F							3.254	3.370	3.281	3.521
Replicate Prob(F)							0.0421	0.0638	0.0410	0.0328
Treatment F							101.704	13.630	5.760	16.855
Treatment Prob(F)							0.0001	0.0001	0.0008	0.0001

LSU AgCenter
Rice Research Station
Ratoon Response of Rice Hybrids to Nitrogen Fertilizer Rates

Trial ID: 05-CM-25
Location: Rice Research Station

Crop Name							Rice	Rice	Rice
Rating Date							10-Aug-2005	7-Nov-2005	
Rating Data Type							Yield	Yield	Yield
Rating Unit							lb/A	lb/A	lb/A
Crop Stage							Main	Ratoon	Total
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	XP723						10447	1255	11949
1	Urea	46	GR	60	LB AI/A	Postharvest			
2	XP723						11282	1681	12963
2	Urea	46	GR	90	LB AI/A	Postharvest			
3	XP723						10623	1246	11870
3	Urea	46	GR	120	LB AI/A	Postharvest			
4	XP723						11232	1801	13033
4	Urea	46	GR	150	LB AI/A	Postharvest			
5	XP721						9410	1661	11072
5	Urea	46	GR	60	LB AI/A	Postharvest			
6	XP721						9976	2306	12282
6	Urea	46	GR	90	LB AI/A	Postharvest			
7	XP721						9723	2515	12238
7	Urea	46	GR	120	LB AI/A	Postharvest			
8	XP721						10129	2453	12582
8	Urea	46	GR	150	LB AI/A	Postharvest			
LSD (P=.05)							640.0	583.7	1021.3
Standard Deviation							435.1	395.7	692.4
CV							4.2	21.22	5.65
Grand Mean							10352.8	1864.88	12248.5
Replicate F							1.174	0.370	0.569
Replicate Prob(F)							0.3435	0.7752	0.6418
Treatment F							9.649	6.559	3.407
Treatment Prob(F)							0.0001	0.0004	0.0146

Nitrogen Sources and Application Timings in a Conventional Tillage System

Experiment number ..... : 05-CM-18

Site and design ..... :
- **Location/Cooperator** ..... : Rice Research Station (South Unit)
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** ..... : 4
- **Plot size** ..... : 7 x 20 ft
- **Row width/rows per plot** ..... : 7 in / 12

Soil type ..... : Crowley silt loam
- **% organic matter** ..... : 2.29
- **pH** ..... : 6.6
- **Extractable nutrients** ..... : P-96; K-210; Na-258; Ca-1973; Mg-609; Zn-5.1; Fe-106 ppm

Crop/Variety ..... : Rice / Cocodrie
- **Planting method/date** ..... : Drill seeded / April 7
- **Seeding rate/depth** ..... : 33 seed/ft^2 / 1 in
- **Emergence date** ..... : April 25
- **Harvest date** ..... : August 16

Fertilization ..... : 300 lb/A 0-24-24, September 20, 2004

Water management ..... :
- **Flush** ..... : April 8, 19, 28, May 5, 11
- **Flood** ..... : May 23
- **Drain** ..... : August 2

Pest management ..... :
- **Herbicides** ..... : 4 qt/A Stam + 0.75 oz/A Permit, May 4; 20 oz/A Clincher + 1 qt/A COC, June 17; 15 oz/A Clincher + 1 qt/A COC, June 29
- **Insecticides** ..... : 1 oz/A Icon, April 4
- **Fungicides** ..... : None

Treatment Application

Application Description: 05-CM-18

	A	B
Date ..... :	May 20	June 27
Time of day..... :	2:00 pm	2:00 pm
Application method ..... :	Broadcast	Broadcast
Application timing ..... :	Preflood	Midseason
Placement ..... :	Soil	Mud
Air temperature ..... :	91	90
Relative humidity (%)..... :	70	67
Wind (mph/direction)..... :	5 W	5 S
Dew presence (Y/N) ..... :	N	N
Soil temperature ..... :	88	NA
Soil moisture..... :	Low	Mud
Cloud cover (%) ..... :	50	70
Applied by ..... :	JL, RR	JB, RR

Application Equipment:

Equipment..... :	Hand	Hand
Operating pressure..... :	NA	NA
Nozzle type/size ..... :	NA	NA
Nozzle spacing/no...... :	NA	NA
Boom height ..... :	NA	NA
Ground speed (mph) ..... :	NA	NA
Incorporation & depth ..... :	NA	NA

Crop Stage at Application:

Height ..... :	5-6 in	NA
No. leaves/tillers ..... :	4 leaf-1 tiller	PD + 7 days

LSU AgCenter
Rice Research Station
Nitrogen Sources and Application Timings in a Conventional Tillage System

Trial ID: 05-CM-18
Location: Rice Research Station

Crop Name							Rice	Rice	Rice
Rating Date								16-Aug-2005	16-Aug-2005
Rating Data Type							50% Head	Height	Yield
Rating Unit							days	inches	lb/A
Crop Stage							Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	Urea						81	36	9014
1	Urea	46	GR	150	LB AI/A	Preflood			
2	Urea						79	36	9139
2	Urea	46	GR	90	LB AI/A	Preflood			
2	Urea	46	GR	60	LB AI/A	Midseason			
3	Urea						80	36	9036
3	Urea	46	GR	120	LB AI/A	Preflood			
3	Urea	46	GR	30	LB AI/A	Midseason			
4	Ammonium sulfate						80	36	8767
4	Ammonium sulfate	21	GR	150	LB AI/A	Preflood			
5	Ammonium sulfate						79	34	8189
5	Ammonium sulfate	21	GR	90	LB AI/A	Preflood			
5	Ammonium sulfate	21	GR	60	LB AI/A	Midseason			
6	Ammonium sulfate						79	35	8604
6	Ammonium sulfate	21	GR	120	LB AI/A	Preflood			
6	Ammonium sulfate	21	GR	30	LB AI/A	Midseason			
7	Urea/ammonium sulfate						81	37	8976
7	Urea/ammonium sulfate	33	GR	150	LB AI/A	Preflood			
8	Urea/ammonium sulfate						79	36	9092
8	Urea/ammonium sulfate	33	GR	90	LB AI/A	Preflood			
8	Urea/ammonium sulfate	33	GR	60	LB AI/A	Midseason			
9	Urea/ammonium sulfate						80	37	8832
9	Urea/ammonium sulfate	33	GR	120	LB AI/A	Preflood			
9	Urea/ammonium sulfate	33	GR	30	LB AI/A	Midseason			
LSD (P=.05)							0.7	0.9	534.3
Standard Deviation							0.5	0.5	366.1
CV							0.6	1.5	4.14
Replicate F							3.388	0.000	0.301
Replicate Prob(F)							0.0344	1.0000	0.8244
Treatment F							12.429	8.286	2.706
Treatment Prob(F)							0.0001	0.0002	0.0281

Agrotain Urease Inhibitor in Conventional Tillage Production System

Experiment number ..... : 05-CM-17

Site and design ..... :
- **Location/Cooperator** ..... : Rice Research Station (South Unit)
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** ..... : 4
- **Plot size** ..... : 7 x 20 ft
- **Row width/rows per plot** ..... : 7 in / 12

Soil type ..... : Crowley silt loam
- **% organic matter** ..... : 1.63
- **pH** ..... : 6.8
- **Extractable nutrients** ..... : P-46; K-148; Na-174; Ca-1509; Mg-401; Zn-3.9; Fe-67 ppm

Crop/Variety ..... : Rice / Cocodrie
- **Planting method/date** ..... : Drill seeded / April 4
- **Seeding rate/depth** ..... : 33 seed/ft^2 /1 in
- **Emergence date** ..... : April 25
- **Harvest date** ..... : August 25

Fertilization ..... : 300 lb/A 0-24-24, September 20, 2004

Water management ..... :
- **Flush** ..... : April 7, 19, 28, May 5, 11
- **Flood** ..... : May 24
- **Drain** ..... : August 17

Pest management ..... :
- **Herbicides** ..... : 4 qt/A Stam + 0.75 oz/A Permit, May 4; 1.5 pt/A Basagran + 1qt/A COC, May 16; 15 oz/A Clincher + 1 qt/A COC, June 1 and 29
- **Insecticides** ..... : 1oz/A Icon, April 4
- **Fungicides** ..... : None

Treatment Application

Application Description: 05-CM-17

	A	B	C	D
Date ..... :	May 6	May 11	May 16	May 24
Time of day..... :	2:00 pm	8:00 am	10:00 am	7:30 am
Application method ..... :	Broadcast	Broadcast	Broadcast	Broadcast
Application timing ..... :	15 day PF	10 day PF	5 day PF	0 day PF
Placement ..... :	Soil	Soil	Soil	Soil
Air temperature ..... :	82	72	74	77
Relative humidity (%)..... :	50	86	50	85
Wind (mph/direction)..... :	5 NE	5 E	3 S	3 SW
Dew presence (Y/N) ..... :	N	Y	N	N
Soil temperature ..... :	NA	73	72	81
Soil moisture..... :	Wet	Adequate	Dry	Dry
Cloud cover (%) ..... :	0	Fog	10	0
Applied by ..... :	JL, RR	JL, RR	JB	RR

Application Equipment:

Equipment..... :	Hand	Hand	Hand	Hand
Operating pressure..... :	NA	NA	NA	NA
Nozzle type/size ..... :	NA	NA	NA	NA
Nozzle spacing/no...... :	NA	NA	NA	NA
Boom height ..... :	NA	NA	NA	NA
Ground speed (mph) ..... :	NA	NA	NA	NA
Incorporation & depth ..... :	NA	NA	NA	NA

Crop Stage at Application:

Height ..... :	3-4 in	3-5 in	4-5 in	4-6 in
No. leaves/tillers ..... :	2-3 leaf	2-4 leaf	4 leaf	4 leaf-1 tiller

LSU AgCenter
Rice Research Station
Agrotain Urease Inhibitor in Conventional Tillage Production System

Trial ID: 05-CM-17
Location: Rice Research Station

Crop Name							Rice	Rice	Rice
Rating Date								23-Aug-2005	25-Aug-2005
Rating Data Type							50% Head	Height	Yield
Rating Unit							days	inches	lb/A
Crop Stage							Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	15 days preflood						80	31	4415
1	Agrotain-treated urea	46	GR	150	LB AI/A	Preflood			
2	15 days preflood						79	30	3949
2	Urea	46	GR	150	LB AI/A	Preflood			
3	10 days preflood						79	31	4387
3	Agrotain-treated urea	46	GR	150	LB AI/A	Preflood			
4	10 days preflood						81	30	3528
4	Urea	46	GR	150	LB AI/A	Preflood			
5	5 days preflood						82	34	7644
5	Agrotain-treated urea	46	GR	150	LB AI/A	Preflood			
6	5 days preflood						81	34	7235
6	Urea	46	GR	150	LB AI/A	Preflood			
7	0 days preflood						86	36	7458
7	Agrotain-treated urea	46	GR	150	LB AI/A	Preflood			
8	0 days preflood						85	36	8107
8	Urea	46	GR	150	LB AI/A	Preflood			
LSD (P=.05)							1.6	2.3	906.4
Standard Deviation							1.1	1.3	616.2
CV							1.31	4.05	10.55
Replicate F							3.175	0.454	1.469
Replicate Prob(F)							0.0453	0.6442	0.2517
Treatment F							23.651	11.126	39.153
Treatment Prob(F)							0.0001	0.0001	0.0001

Agrotain Comparison

Experiment number ..... : 05-CS-22

Site and design ..... :
- **Location/Cooperator** ..... : Rice Research Station (South Unit)
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** ..... : 4
- **Plot size** ..... : 7 x 20 ft
- **Row width/rows per plot** ..... : 7 in / 12

Soil type ..... : Crowley silt loam
- **% organic matter** ..... : 2.29
- **pH** ..... : 6.6
- **Extractable nutrients** ..... : P-96; K-210; Na-258; Ca-1973; Mg-609; Zn-5.1; Fe-106 ppm

Crop/Variety ..... : Rice / Cocodrie
- **Planting method/date** ..... : Drill seeded / April 7
- **Seeding rate/depth** ..... : 33 seed/ft^2 / 1 in
- **Emergence date** ..... : April 25
- **Harvest date** ..... : August 16

Fertilization ..... : 300 lb/A 0-24-24, September 20, 2004

Water management ..... :
- **Flush** ..... : April 8, 19, 28, May 5, 11
- **Flood** ..... : May 23
- **Drain** ..... : August 2

Pest management ..... :
- **Herbicides** ..... : 4 qt/A Stam + 0.75 oz/A Permit, May 4; 20 oz/A Clincher + 1 qt/A COC, June 17; 15 oz/A Clincher + 1 qt/A COC, June 29
- **Insecticides** ..... : 1 oz/A Icon, April 4
- **Fungicides** ..... : None

LSU AgCenter
Rice Research Station
Agrotain Comparison

Trial ID: 05-CS-22
Location: RRS-South Unit

Crop Name							Rice	Rice	Rice
Rating Date								16-Aug-2005	16-Aug-2005
Rating Data Type							50% Head	Height	Yield
Rating Unit							days	inches	lb/A
Crop Stage							Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	Agrotain-treated urea	46	GR	90	LB AI/A	Preflood	79	35	7824
2	Urea	46	GR	115	LB AI/A	Preflood	79	35	8231
3	Agrotain-treated urea	46	GR	120	LB AI/A	Preflood	80	36	8395
4	Urea	46	GR	152	LB AI/A	Preflood	80	37	8698
5	Agrotain-treated urea	46	GR	150	LB AI/A	Preflood	80	37	8626
6	Urea	46	GR	190	LB AI/A	Preflood	80	38	9214
LSD (P=.05)							0.6	1.5	477.8
Standard Deviation							0.4	0.8	317.1
CV							0.53	2.23	3.73
Replicate F							0.238	2.627	1.549
Replicate Prob(F)							0.8684	0.1211	0.2431
Treatment F							3.667	4.763	8.793
Treatment Prob(F)							0.0229	0.0174	0.0005

Rice Response to N-Cal (Calcium Chloride) Application Rates and Timings

Experiment number ..... : 05-VP-11

Site and design ..... :
- **Location/Cooperator** ..... : Vermilion Parish / Lounsberry Farm
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** ..... : 4
- **Plot size** ..... : 4 x 16 ft
- **Row width/rows per plot** ..... : 8 in / 7

Soil type ..... : Crowley silt loam
- **% organic matter** ..... : 1.72
- **pH** ..... : 5.1
- **Extractable nutrients** ..... : P-104; K-155; Na-68; Ca-744; Mg-143; Zn-2.3; Fe-186 ppm

Crop/Variety ..... : Rice / Cocodrie
- **Planting method/date** ..... : Drill seeded / March 30
- **Seeding rate/depth** ..... : 90 lb/A / 1 in
- **Emergence date** ..... : April 6
- **Harvest date** ..... : August 11

Fertilization ..... : 200 lb/A 0-26-26, March 14; 390 lb/A 46-0-0, May 3

Water management ..... :
- **Flush** ..... : April 14, 24
- **Flood** ..... : May 6
- **Drain** ..... : July 25

Pest management ..... :
- **Herbicides** ..... : 0.5 oz/A Permit + 3 qt/A Duet, April 21; 3 qt/A Arrosolo + 1 oz/A Permit, May 4
- **Insecticides** ..... : 1.5 pt/A Malathion, June 24
- **Fungicides** ..... : 12 oz/A Quadris, June 13 and 29

Treatment Application

Application Description: 05-VP-11

	A	B
Date ..... :	March 31	May 3
Time of day..... :	9:30 am	10:00 am
Application method ..... :	Broadcast	Broadcast
Application timing ..... :	Preplant	Preflood
Placement ..... :	Soil	Foliar
Air temperature ..... :	75	69
Relative humidity (%)..... :	95	45
Wind (mph/direction)..... :	1-2 W	5 NE
Dew presence (Y/N) ..... :	N	N
Soil temperature ..... :	69	63
Soil moisture..... :	Adequate	Adequate
Cloud cover (%) ..... :	100	30
Applied by ..... :	JB	JB

Application Equipment:

Equipment..... :	CO_2 backpack	CO_2 backpack
Operating pressure..... :	28 psi	26 psi
Nozzle type/size ..... :	DG / 8003	DG / 8003
Nozzle spacing/no...... :	20 in / 2	20 in / 2
Boom height ..... :	16 in	18 in
Ground speed (mph)..... :	3	3
Incorporation & depth ..... :	NA	NA

Crop Stage at Application:

Height ..... :	NA	5-6 in
No. leaves/tillers ..... :	NA	1-2 tiller

LSU AgCenter
Rice Research Station
Rice Response to N-Cal (Calcium Chloride) Application Rates and Timings

Trial ID: 05-VP-11
Location: Vermilion Parish

Crop Name						Rice	Rice	Rice	Rice	Rice
Rating Date							1-Aug-2005	1-Aug-2005	1-Aug-2005	1-Aug-2005
Rating Data Type						50% Head	Height	SB Severity	Ldg-Rate	Ldg-Type
Rating Unit						days	inches	1-9	%	1-5
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit					
1	Nontreated					87	37	8	47	2
2	N-Cal	1.33	L	5	GAL/A	87	38	8	47	1
2	Preplant									
3	N-Cal	1.33	L	5	GAL/A	87	36	8	53	2
3	Preflood									
4	N-Cal	1.33	L	10	GAL/A	88	38	8	37	1
4	Preplant									
5	N-Cal	1.33	L	10	GAL/A	89	39	8	40	1
5	Preflood									
6	N-Cal	1.33	L	15	GAL/A	87	38	8	15	2
6	Preplant									
7	N-Cal	1.33	L	15	GAL/A	88	38	8	20	2
7	Preflood									
8	N-Cal	1.33	L	20	GAL/A	88	38	8	37	2
8	Preplant									
9	N-Cal	1.33	L	20	GAL/A	89	34	9	40	1
9	Preflood									
LSD (P=.05)						1.2	4.4	0.5	31.1	2.1
Standard Deviation						0.8	2.5	0.4	18.0	1.2
CV						0.91	6.73	4.29	48.33	80.9
Replicate F						6.087	0.545	2.000	1.090	0.393
Replicate Prob(F)						0.0031	0.5902	0.1409	0.3599	0.6816
Treatment F						3.826	0.989	3.000	1.442	0.448
Treatment Prob(F)						0.0050	0.4796	0.0176	0.2533	0.8745

LSU AgCenter
Rice Research Station
Rice Response to N-Cal (Calcium Chloride) Application Rates and Timings

Trial ID: 05-VP-11
Location: Vermilion Parish

Crop Name						Rice	Rice
Rating Date						1-Aug-2005	
Rating Data Type						Yield	Ca Content
Rating Unit						lb/A	%
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit		
1	Nontreated					7719	0.39
2	N-Cal	1.33	L	5	GAL/A	6862	0.37
2	Preplant						
3	N-Cal	1.33	L	5	GAL/A	6163	
3	Preflood						
4	N-Cal	1.33	L	10	GAL/A	6522	0.40
4	Preplant						
5	N-Cal	1.33	L	10	GAL/A	6372	
5	Preflood						
6	N-Cal	1.33	L	15	GAL/A	6831	0.38
6	Preplant						
7	N-Cal	1.33	L	15	GAL/A	6417	
7	Preflood						
8	N-Cal	1.33	L	20	GAL/A	6870	0.42
8	Preplant						
9	N-Cal	1.33	L	20	GAL/A	6559	
9	Preflood						
LSD (P=.05)						1035.9	0.052
Standard Deviation						706.4	0.034
CV						10.54	8.61
Replicate F						1.828	1.545
Replicate Prob(F)						0.1715	0.2537
Treatment F						1.641	1.152
Treatment Prob(F)						0.1701	0.3793

CULTURAL MANAGEMENT EXPERIMENTS

J.A. Bond, J.P. Leonards, R.P. Regan, and D.M. Walker

Rice Seeding Rate

Seeding rate studies were conducted with the varieties CL131 and Trenasse in water- and drill-seeded cultural systems. In the drill-seeded system, initial seeding rates were established to deliver 10, 20, 30, 40, and 50 seeds/ft^2. In the water-seeded system, initial seeding rates were established to deliver 30, 40, 50, 60, and 70 seeds/ft^2. Nitrogen was applied at a rate of 165 lb/A in single preflood and preplant applications in the drill- and water-seeded system, respectively. Stand densities, days to 50% heading, plant height, and grain yield were determined. Main-crop grain yields were optimized at seeding rates of 30 and 60 seeds/ft^2 in drill- and water-seeded systems, respectively. Seeding rates of 30 and 60 seeds/ft^2 correlate to rates of approximately 70 and 135 lb/A, respectively, for typical rice varieties. Stand densities were 12 to 14 plants/ft^2 at those seeding rates in both drill- and water-seeded systems.

Two other experiments were conducted at the Rice Research Station South Unit and at the on-farm site in Morehouse Parish to investigate the interaction between variety, seeding rate, and nitrogen fertilizer rate. One experiment determined the response of Cheniere, CL131, and Wells to four seeding rates and three levels of N fertilization. The second experiment tested the response of Cheniere and Wells at four different seeding rates to an early-season ("starter application") of ammonium sulfate. At the Rice Research Station South Unit, rice water weevil infestations were severe. Yields of all three varieties were optimized following an application of 180 lb N/A. At Morehouse Parish, 30 seeds/ft^2 was determined to be the optimum seeding rate, regardless of variety or N level. No response to 21 lb N/A as ammonium sulfate was observed for either Cheniere or Wells at either location.

A grain drill comparison was conducted at the Rice Research Station South Unit to determine rice response to seeding rates of 60 and 100 lb/A established with a John Deere 1590 or a Great Plains 1520 in conventional and stale seedbed production systems. Stand densities, days to 50% heading, plant height, and grain yield were determined. Main effects of tillage system, grain drill, and seeding rate were significant. Grain yields were optimized in a conventional tillage system. Averaged across tillage system and seeding rate, rice grain yields were higher when seeded with a Great Plains 1520 grain drill. Grain yields were higher when seeding rate was 100 compared with 60 lb/A.

Miscellaneous Cultural Management Experiments

Crop rotation experiments were begun in 2005 at the Rice Research Station South Unit. Rotations consisted of continuous rice, a 1:1 rotation of rice and soybean, a 1:1 rotation of rice and fallow ground, and a 1:1 rotation of rice and grain sorghum. Tillage systems included conventional tillage and no-tillage. Rice yields were approximately 8000 lb/A in 2005. Soil test results revealed no differences in soil chemical properties at the beginning of this long-term experiment.

Experiments were begun in 2005 to identify optimum preplant and early-season weed management strategies in a stale seedbed rice production system. Main-crop grain yields were reduced 490 and 870 lb/A when Valor was applied at 1 and 2 oz/A, respectively, as a preplant burndown application 30 days prior to planting compared with application of 2,4-D. Rice seedling density and main-crop grain yields were reduced dramatically when Valor (1 or 2 oz/A) was applied the day of planting compared with application at 21 or 35 days prior to planting.

A related experiment determined the efficacy of different Clearfield weed management programs in a stale seedbed production system. Herbicide programs containing Newpath effectively controlled barnyardgrass, broadleaf signalgrass, and Amazon sprangletop in a stale seedbed production system. Furthermore, yields were reduced by interference from grass weed species when Newpath was not used as a component of the weed control system.

An experiment to determine the tolerance of commercial rice varieties and hybrids to Grasp herbicide was conducted in Morehouse Parish. Days to 50% heading, plant height, and grain yield were determined. Grain yields of all varieties and hybrids tested were equivalent following application of Grasp at 4 oz/A, which corresponds to two times the labeled application rate.

Research to examine the influence of a harpin protein (Proact) on growth and yield of rice grown in southwestern Louisiana was conducted at the Rice Research Station South Unit in 2005. Stand densities, days to 50% heading, plant height, and grain yield were determined. No differences among Proact treatments were observed for any parameter measured. Although not significant, a numerical trend of increased rough rice grain yield following an application at panicle initiation compared with application to 4-leaf rice was observed for both application rates. At both application timings, rough rice grain yields were slightly lower when the Proact rate increased from 0.5 to 1.0 oz/A.

An experiment was conducted to determine the effect on rice yield and quality of sodium chlorate applied as a preharvest desiccant. Main-crop grain yields were reduced when sodium chlorate was applied 7 days preharvest compared with 3 days preharvest.

Experiments were conducted at the Rice Research Station and at on-farm sites in Vermilion and Morehouse parishes to compare the grain yields of rice hybrids and varieties. Main-crop grain yields ranged from 8,544 to 10,243 lb/A for rice hybrids and 7,497 to 8,188 lb/A for conventional varieties at the Rice Research Station. Main-crop grain yields ranged from 10,297 to 13,490 lb/A for rice hybrids and 7,781 to 11,362 lb/A for conventional varieties at the on-farm site in Vermilion Parish. Main-crop grain yields ranged from 9,436 to 11,959 lb/A for rice hybrids and 7,917 to 10,005 lb/A for conventional varieties at the on-farm site in Morehouse Parish.

Ratoon Crop Management

Ratoon stubble management experiments were conducted at the Rice Research Station. One experiment was conducted with conventional varieties (Cocodrie and Trenasse) while the second was conducted with rice hybrids (XP723 and XP721). Main crop straw was flail-mowed, rolled, cut at 12 inches with the combine's cutter bar, or left at normal cutting height. This research was compromised due to damage from Hurricane Rita during ratoon-crop development.

Other ratoon experiments were conducted at the Rice Research Station in 2005. Some of these included experiments to compare ratoon production in water- and drill-seeded production systems, to determine the ratoon response of rice varieties to N fertilizer applied at different timings, to determine the ratoon response to phosphorus and potassium applications, and to observe the response to herbicides applied during the ratoon crop. This research was compromised due to damage from Hurricane Rita during ratoon-crop development.

Seeding Rates for Drill-Seeded Cultural System

Experiment number ..... : 05-CS-08

Site and design ..... :
- **Location/Cooperator** ..... : Rice Research Station (South Unit)
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** ..... : 4
- **Plot size** ..... : 7 x 20 ft
- **Row width/rows per plot** ..... : 7 in / 12

Soil type ..... : Crowley silt loam
- **% organic matter** ..... : 1.51
- **pH** ..... : 7.2
- **Extractable nutrients** ..... : P-35; K-153; Na-225; Ca-1946; Mg-531; Zn-2.6; Fe-45 ppm

Crop/Variety ..... : Rice / CL131, Trenasse
- **Planting method/date** ..... : Drill seeded / April 4
- **Seeding rate/depth** ..... : Multiple / 1 in
- **Emergence date** ..... : CL131, April 25; Trenasse, April 27
- **Harvest date** ..... : August 25

Fertilization ..... : 300 lb/A 0-24-24, September 20, 2004; 360 lb/A 46-0-0 preflood, May 23

Water management ..... :
- **Flush** ..... : April 7, 19, 28, May 5, 11
- **Flood** ..... : May 24
- **Drain** ..... : August 17

Pest management ..... :
- **Herbicides** ..... : 4 qt/A Stam + 0.75 oz/A Permit, May 4; 1.5 pt/A Basagran + 1qt/A COC, May 16; 15 oz/A Clincher + 1 qt/A COC, June 1 and 29
- **Insecticides** ..... : 1oz/A Icon, April 4
- **Fungicides** ..... : None

LSU AgCenter
Rice Research Station
Seeding Rates for Drill-Seeded Cultural System

Trial ID: 05-CS-08
Location: RRS-South Unit

Crop Name		Rice	Rice	Rice	Rice	Rice	Rice
Rating Date		10-May-2005		23-Aug-2005	25-Aug-2005	25-Aug-2005	25-Aug-2005
Rating Data Type		Density	50% Head	Height	Ldg-Rate	Ldg-Type	Yield
Rating Unit		Pl/sq m	days	inches	%	1-5	lb/A
Crop Stage		Main	Main	Main	Main	Main	Main
Trt No.	Treatment Name						
1	CL131	56	86	31	6	1	6815
1	10 seed/square foot						
2	CL131	108	85	32	1	0	7964
2	20 seed/square foot						
3	CL131	163	84	32	1	1	8196
3	30 seed/square foot						
4	CL131	225	84	34	3	0	8923
4	40 seed/square foot						
5	CL131	278	83	32	3	1	8516
5	50 seed/square foot						
6	Trenasse	45	82	39	5	1	8113
6	10 seed/square foot						
7	Trenasse	89	80	38	14	2	8683
7	20 seed/square foot						
8	Trenasse	139	79	39	24	4	9293
8	30 seed/square foot						
9	Trenasse	219	79	40	31	4	9080
9	40 seed/square foot						
10	Trenasse	212	78	40	40	5	9596
10	50 seed/square foot						
LSD (P=.05)		38.1	1.0	1.7	17.2	1.2	684.8
Standard Deviation		26.3	0.7	1.0	11.9	0.8	471.9
CV		17.14	0.83	2.81	93.05	51.32	5.54
Replicate F		3.821	5.248	1.879	2.990	2.625	5.621
Replicate Prob(F)		0.0211	0.0055	0.1815	0.0485	0.0709	0.0040
Treatment F		36.242	68.928	41.407	5.633	16.798	11.467
Treatment Prob(F)		0.0001	0.0001	0.0001	0.0002	0.0001	0.0001

Seeding Rates in Water-Seeded Cultural System

Experiment number ..... : 05-CS-10

Site and design ..... :
- **Location/Cooperator** ..... : Rice Research Station (South Unit)
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** ..... : 4
- **Plot size** ..... : 7 x 20 ft
- **Row width/rows per plot** ..... : NA

Soil type ..... : Crowley silt loam
- **% organic matter** ..... : 1.68
- **pH** ..... : 7.2
- **Extractable nutrients** ..... : P-66; K-149; Na-186; Ca-1915; Mg-486; Zn-2.9; Fe-58 ppm

Crop/Variety ..... : Rice / CL131, Trenasse
- **Planting method/date** ..... : Water seeded / April 8
- **Seeding rate/depth** ..... : Multiple
- **Emergence date** ..... : NA
- **Harvest date** ..... : August 9

Fertilization ..... : 300 lb/A 0-24-24, September 20, 2004; 200 lb/A 46-0-0 preflood, August 10

Water management ..... :
- **Flush** ..... : NA
- **Flood** ..... : April 14
- **Drain** ..... : July 25

Pest management ..... :
- **Herbicides** ..... : 1.5 pt/A Basagran + 1 qt/A COC, May 16; 15 oz/A Clincher + 1 qt/A COC, June 1 and 29
- **Insecticides** ..... : 1 oz Icon seed treatment
- **Fungicides** ..... : None

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Rice Research Station
Seeding Rates in Water-Seeded Cultural System

Trial ID: 05-CS-10
Location: RRS-South Unit

Crop Name		Rice	Rice	Rice	Rice
Rating Date		10-May-2005		29-Jul-2005	9-Aug-2005
Rating Data Type		Density	50% Head	Height	Yield
Rating Unit		Pl/sq m	days	inches	lb/A
Crop Stage		Main	Main	Main	Main
Trt No.	Treatment Name				
1	CL131	89	89	30	4881
1	30 seed/square foot				
2	CL131	105	88	30	5732
2	40 seed/square foot				
3	CL131	143	88	30	5829
3	50 seed/square foot				
4	CL131	165	87	31	6531
4	60 seed/square foot				
5	CL131	192	87	30	6471
5	70 seed/square foot				
6	Trenasse	74	83	32	4933
6	30 seed/square foot				
7	Trenasse	80	82	31	5052
7	40 seed/square foot				
8	Trenasse	89	83	31	5667
8	50 seed/square foot				
9	Trenasse	100	82	31	5906
9	60 seed/square foot				
10	Trenasse	109	82	33	6464
10	70 seed/square foot				
LSD (P=.05)		28.7	1.0	1.8	595.4
Standard Deviation		19.8	0.7	1.0	410.3
CV		17.27	0.8	3.37	7.14
Replicate F		8.213	4.427	0.829	4.763
Replicate Prob(F)		0.0005	0.0118	0.4523	0.0086
Treatment F		15.675	77.565	3.621	9.473
Treatment Prob(F)		0.0001	0.0001	0.0097	0.0001

Rice Response to Seeding and Nitrogen Rates 1

Experiment number ..... : 05-CM-19

Site and design ..... :
- **Location/Cooperator** ..... : Rice Research Station (South Unit)
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** ..... : 4
- **Plot size** ..... : 7 x 20 ft
- **Row width/rows per plot** ..... : 7 in / 12

Soil type ..... : Crowley silt loam
- **% organic matter** ..... : 1.51
- **pH** ..... : 7.2
- **Extractable nutrients** ..... : P-35; K-153; Na-225; Ca-1946; Mg-531; Zn-2.6; Fe-45 ppm

Crop/Variety ..... : Rice / multiple
- **Planting method/date** ..... : Drill seeded / April 4
- **Seeding rate/depth** ..... : Multiple / 1 in
- **Emergence date** ..... : April 26
- **Harvest date** ..... : August 26

Fertilization ..... : 300 lb/A 0-24-24, September 20, 2004

Water management ..... :
- **Flush** ..... : April 7, 19, 28, May 5, 11
- **Flood** ..... : May 24
- **Drain** ..... : August 17

Pest management ..... :
- **Herbicides** ..... : 4 qt/A Stam + 0.75 oz/A Permit, May 4; 1.5 pt/A Basagran + 1qt/A COC, May 16; 15 oz/A Clincher + 1 qt/A COC, June 1 and 29
- **Insecticides** ..... : 1oz/A Icon, April 4
- **Fungicides** ..... : None

Treatment Application

Application Description: 05-CM-19

	A
Date ..... :	May 23
Time of day..... :	1:30 pm
Application method ..... :	Broadcast
Application timing ..... :	Preflood
Placement ..... :	Soil
Air temperature ..... :	93
Relative humidity (%)..... :	60
Wind (mph/direction)..... :	5 SW
Dew presence (Y/N) ..... :	N
Soil temperature ..... :	83
Soil moisture..... :	Dry
Cloud cover (%) ..... :	50
Applied by ..... :	JB, JL

Application Equipment:

Equipment..... :	Cart
Operating pressure..... :	NA
Nozzle type/size ..... :	NA
Nozzle spacing/no...... :	NA
Boom height ..... :	NA
Ground speed (mph) ..... :	NA
Incorporation & depth ..... :	NA

Crop Stage at Application:

Height ..... :	4-7 in
No. leaves/tillers ..... :	4 leaf-1 tiller

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Rice Research Station
Rice Response to Seeding and Nitrogen Rates 1

Trial ID: 05-CM-19
Location: RRS-South Unit

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Rice	Rice	Rice	Rice
Crop Name							Rice	Rice	Rice	Rice
Rating Date							10-May-2005		23-Aug-2005	25-Aug-2005
Rating Data Type							Density	50% Head	Height	Yield
Rating Unit							Pl/sq. m	days	inches	lb/A
Crop Stage							Main	Main	Main	Main
1	Cheniere						29	89	29	2904
1	7.5 seeds/square foot									
1	Urea	46	GR	60	LB AI/A	Preflood				
2	Cheniere						38	89	30	3718
2	7.5 seeds/square foot									
2	Urea	46	GR	120	LB AI/A	Preflood				
3	Cheniere						39	91	32	3473
3	7.5 seeds/square foot									
3	Urea	46	GR	180	LB AI/A	Preflood				
4	Cheniere						93	87	29	3945
4	15 seeds/square foot									
4	Urea	46	GR	60	LB AI/A	Preflood				
5	Cheniere						64	89	30	4375
5	15 seeds/square foot									
5	Urea	46	GR	120	LB AI/A	Preflood				
6	Cheniere						77	89	32	5641
6	15 seeds/square foot									
6	Urea	46	GR	180	LB AI/A	Preflood				
7	Cheniere						174	85	30	5226
7	30 seeds/square foot									
7	Urea	46	GR	60	LB AI/A	Preflood				
8	Cheniere						155	86	32	6328
8	30 seeds/square foot									
8	Urea	46	GR	120	LB AI/A	Preflood				
9	Cheniere						124	88	33	5555
9	30 seeds/square foot									
9	Urea	46	GR	180	LB AI/A	Preflood				
10	Cheniere						264	84	30	6164
10	60 seeds/square foot									
10	Urea	46	GR	60	LB AI/A	Preflood				
11	Cheniere						251	84	32	6565
11	60 seeds/square foot									
11	Urea	46	GR	120	LB AI/A	Preflood				
12	Cheniere						219	85	33	7398
12	60 seeds/square foot									
12	Urea	46	GR	180	LB AI/A	Preflood				
13	CL 131						50	84	30	4272
13	7.5 seeds/square foot									
13	Urea	46	GR	60	LB AI/A	Preflood				

LSU AgCenter
Rice Research Station
Rice Response to Seeding and Nitrogen Rates 1

Trial ID: 05-CM-19
Location: RRS-South Unit

Crop Name							Rice	Rice	Rice	Rice
Rating Date							10-May-2005		23-Aug-2005	25-Aug-2005
Rating Data Type							Density	50% Head	Height	Yield
Rating Unit							Pl/sq. m	days	inches	lb/A
Crop Stage							Main	Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage				
14	CL 131						57	86	30	5524
14	7.5 seeds/square foot									
14	Urea	46	GR	120	LB AI/A	Preflood				
15	CL 131						43	87	32	6770
15	7.5 seeds/square foot									
15	Urea	46	GR	180	LB AI/A	Preflood				
16	CL 131						71	81	29	6000
16	15 seeds/square foot									
16	Urea	46	GR	60	LB AI/A	Preflood				
17	CL 131						70	85	31	6813
17	15 seeds/square foot									
17	Urea	46	GR	120	LB AI/A	Preflood				
18	CL 131						91	85	33	8132
18	15 seeds/square foot									
18	Urea	46	GR	180	LB AI/A	Preflood				
19	CL 131						191	79	30	6423
19	30 seeds/square foot									
19	Urea	46	GR	60	LB AI/A	Preflood				
20	CL 131						173	82	32	7870
20	30 seeds/square foot									
20	Urea	46	GR	120	LB AI/A	Preflood				
21	CL 131						147	84	33	8385
21	30 seeds/square foot									
21	Urea	46	GR	180	LB AI/A	Preflood				
22	CL 131						312	78	30	6799
22	60 seeds/square foot									
22	Urea	46	GR	60	LB AI/A	Preflood				
23	CL 131						319	80	32	8352
23	60 seeds/square foot									
23	Urea	46	GR	120	LB AI/A	Preflood				
24	CL 131						328	83	33	9303
24	60 seeds/square foot									
24	Urea	46	GR	180	LB AI/A	Preflood				
25	Wells						38	91	34	3422
25	7.5 seeds/square foot									
25	Urea	46	GR	60	LB AI/A	Preflood				
26	Wells						39	92	35	3787
26	7.5 seeds/square foot									
26	Urea	46	GR	120	LB AI/A	Preflood				

LSU AgCenter
Rice Research Station
Rice Response to Seeding and Nitrogen Rates 1

Trial ID: 05-CM-19
Location: RRS-South Unit

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Rice	Rice	Rice	Rice
Crop Name							Rice	Rice	Rice	Rice
Rating Date							10-May-2005		23-Aug-2005	25-Aug-2005
Rating Data Type							Density	50% Head	Height	Yield
Rating Unit							Pl/sq. m	days	inches	lb/A
Crop Stage							Main	Main	Main	Main
27	Wells						37	93	37	5663
27	7.5 seeds/square foot									
27	Urea	46	GR	180	LB AI/A	Preflood				
28	Wells						86	88	35	4929
28	15 seeds/square foot									
28	Urea	46	GR	60	LB AI/A	Preflood				
29	Wells						72	89	37	6703
29	15 seeds/square foot									
29	Urea	46	GR	120	LB AI/A	Preflood				
30	Wells						70	93	38	6733
30	15 seeds/square foot									
30	Urea	46	GR	180	LB AI/A	Preflood				
31	Wells						152	86	35	4696
31	30 seeds/square foot									
31	Urea	46	GR	60	LB AI/A	Preflood				
32	Wells						141	88	36	7347
32	30 seeds/square foot									
32	Urea	46	GR	120	LB AI/A	Preflood				
33	Wells						143	89	39	8276
33	30 seeds/square foot									
33	Urea	46	GR	180	LB AI/A	Preflood				
34	Wells						207	84	34	5645
34	60 seeds/square foot									
34	Urea	46	GR	60	LB AI/A	Preflood				
35	Wells						264	87	37	7444
35	60 seeds/square foot									
35	Urea	46	GR	120	LB AI/A	Preflood				
36	Wells						267	88	40	8738
36	60 seeds/square foot									
36	Urea	46	GR	180	LB AI/A	Preflood				
LSD (P=.05)							36.2	1.8	1.5	1281.2
Standard Deviation							25.8	1.3	1.1	915.1
CV							18.99	1.52	3.29	15.02
Replicate F							10.354	30.418	7.086	22.401
Replicate Prob(F)							0.0001	0.0001	0.0002	0.0001
Treatment F							50.925	31.770	32.016	13.479
Treatment Prob(F)							0.0001	0.0001	0.0001	0.0001

LSU AgCenter
Rice Research Station
Rice Response to Seeding and Nitrogen Rates 1

Trial ID: 05-CM-19
Location: RRS-South Unit

Crop Name							Rice	Rice	Rice	Rice
Rating Date										
Rating Data Type							Harvest Index	Tillers/Plant	Panicle Weight	Seeds/Panicle
Rating Unit									g	
Crop Stage							Main	Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage				
1	Cheniere						0.36	4.9	2.52	117
1	7.5 seeds/square foot									
1	Urea	46	GR	60	LB AI/A	Preflood				
2	Cheniere						0.46	5.5	2.48	115
2	7.5 seeds/square foot									
2	Urea	46	GR	120	LB AI/A	Preflood				
3	Cheniere						0.45	5.4	2.93	115
3	7.5 seeds/square foot									
3	Urea	46	GR	180	LB AI/A	Preflood				
4	Cheniere						0.47	3.3	2.59	116
4	15 seeds/square foot									
4	Urea	46	GR	60	LB AI/A	Preflood				
5	Cheniere						0.44	3.6	2.78	127
5	15 seeds/square foot									
5	Urea	46	GR	120	LB AI/A	Preflood				
6	Cheniere						0.42	3.0	2.25	103
6	15 seeds/square foot									
6	Urea	46	GR	180	LB AI/A	Preflood				
7	Cheniere						0.40	1.6	2.84	125
7	30 seeds/square foot									
7	Urea	46	GR	60	LB AI/A	Preflood				
8	Cheniere						0.46	2.2	2.72	123
8	30 seeds/square foot									
8	Urea	46	GR	120	LB AI/A	Preflood				
9	Cheniere						0.45	2.2	2.72	126
9	30 seeds/square foot									
9	Urea	46	GR	180	LB AI/A	Preflood				
10	Cheniere						0.46	1.0	2.40	110
10	60 seeds/square foot									
10	Urea	46	GR	60	LB AI/A	Preflood				
11	Cheniere						0.43	1.6	2.53	118
11	60 seeds/square foot									
11	Urea	46	GR	120	LB AI/A	Preflood				
12	Cheniere						0.35	1.4	2.57	119
12	60 seeds/square foot									
12	Urea	46	GR	180	LB AI/A	Preflood				
13	CL131						0.45	6.2	2.12	98
13	7.5 seeds/square foot									
13	Urea	46	GR	60	LB AI/A	Preflood				

LSU AgCenter
Rice Research Station
Rice Response to Seeding and Nitrogen Rates 1

Trial ID: 05-CM-19
Location: RRS-South Unit

Crop Name							Rice	Rice	Rice	Rice
Rating Date										
Rating Data Type							Harvest Index	Tillers/Plant	Panicle Weight	Seeds/Panicle
Rating Unit									g	
Crop Stage							Main	Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage				
14	CL131						0.38	7.3	1.92	92
14	7.5 seeds/square foot									
14	Urea	46	GR	120	LB AI/A	Preflood				
15	CL131						0.37	7.5	1.68	77
15	7.5 seeds/square foot									
15	Urea	46	GR	180	LB AI/A	Preflood				
16	CL131						0.49	4.4	1.93	84
16	15 seeds/square foot									
16	Urea	46	GR	60	LB AI/A	Preflood				
17	CL131						0.46	5.8	1.82	85
17	15 seeds/square foot									
17	Urea	46	GR	120	LB AI/A	Preflood				
18	CL131						0.39	4.4	1.62	77
18	15 seeds/square foot									
18	Urea	46	GR	180	LB AI/A	Preflood				
19	CL131						0.44	2.1	1.71	77
19	30 seeds/square foot									
19	Urea	46	GR	60	LB AI/A	Preflood				
20	CL131						0.43	2.4	2.00	91
20	30 seeds/square foot									
20	Urea	46	GR	120	LB AI/A	Preflood				
21	CL131						0.41	2.9	1.66	74
21	30 seeds/square foot									
21	Urea	46	GR	180	LB AI/A	Preflood				
22	CL131						0.47	1.1	1.60	73
22	60 seeds/square foot									
22	Urea	46	GR	60	LB AI/A	Preflood				
23	CL131						0.43	1.3	1.71	76
23	60 seeds/square foot									
23	Urea	46	GR	120	LB AI/A	Preflood				
24	CL131						0.40	1.3	1.53	73
24	60 seeds/square foot									
24	Urea	46	GR	180	LB AI/A	Preflood				
25	Wells						0.39	8.1	2.81	111
25	7.5 seeds/square foot									
25	Urea	46	GR	60	LB AI/A	Preflood				
26	Wells						0.40	7.8	2.54	88
26	7.5 seeds/square foot									
26	Urea	46	GR	120	LB AI/A	Preflood				

LSU AgCenter
Rice Research Station
Rice Response to Seeding and Nitrogen Rates 1

Trial ID: 05-CM-19
Location: RRS-South Unit

Crop Name							Rice	Rice	Rice	Rice
Rating Date										
Rating Data Type							Harvest Index	Tillers/Plant	Panicle Weight	Seeds/Panicle
Rating Unit									g	
Crop Stage							Main	Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage				
27	Wells						0.41	8.9	2.94	127
27	7.5 seeds/square foot									
27	Urea	46	GR	180	LB AI/A	Preflood				
28	Wells						0.41	3.2	2.38	94
28	15 seeds/square foot									
28	Urea	46	GR	60	LB AI/A	Preflood				
29	Wells						0.44	4.3	2.14	85
29	15 seeds/square foot									
29	Urea	46	GR	120	LB AI/A	Preflood				
30	Wells						0.41	3.9	2.95	119
30	15 seeds/square foot									
30	Urea	46	GR	180	LB AI/A	Preflood				
31	Wells						0.37	1.6	2.22	90
31	30 seeds/square foot									
31	Urea	46	GR	60	LB AI/A	Preflood				
32	Wells						0.43	3.7	2.47	94
32	30 seeds/square foot									
32	Urea	46	GR	120	LB AI/A	Preflood				
33	Wells						0.40	2.7	2.67	112
33	30 seeds/square foot									
33	Urea	46	GR	180	LB AI/A	Preflood				
34	Wells						0.39	1.4	2.43	95
34	60 seeds/square foot									
34	Urea	46	GR	60	LB AI/A	Preflood				
35	Wells						0.41	1.5	2.64	105
35	60 seeds/square foot									
35	Urea	46	GR	120	LB AI/A	Preflood				
36	Wells						0.43	1.5	2.62	104
36	60 seeds/square foot									
36	Urea	46	GR	180	LB AI/A	Preflood				
LSD (P=.05)							0.082	2.84	0.524	24.9
Standard Deviation							0.050	1.74	0.321	15.2
CV							11.91	47.75	13.83	15.18
Replicate F							2.180	0.216	5.388	4.093
Replicate Prob(F)							0.1206	0.8062	0.0067	0.0208
Treatment F							1.346	5.103	5.671	4.154
Treatment Prob(F)							0.1453	0.0001	0.0001	0.0001

Rice Response to Seeding and Nitrogen Rates 2

Experiment number ..... : 05-MP-03

Site and design ..... :
- **Location/Cooperator** ..... : Morehouse Parish / Zaunbrecher Farm (Roland Crymes cooperating)
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** ..... : 4
- **Plot size** ..... : 7 x 20 ft
- **Row width/rows per plot** ..... : 7 in / 12

Soil type ..... : Hebert silty clay
- **% organic matter** ..... : 3.41
- **pH** ..... : 6.3
- **Extractable nutrients** ..... : P-77; K-302; Na-181; Ca-3210; Mg-972; Zn-4.1; Fe-139 ppm

Crop/Variety ..... : Rice / Multiple
- **Planting method/date** ..... : Drill seeded / April 28
- **Seeding rate/depth** ..... : Multiple / 0.5 in
- **Emergence date** ..... : May 14
- **Harvest date** ..... : September 13

Fertilization ..... : NA

Water management ..... :
- **Flush** ..... : May 6, 13, 23
- **Flood** ..... : June 15
- **Drain** ..... : August 30

Pest management ..... :
- **Herbicides** ..... : 13 oz/A Clincher + 1 qt/A COC, May 26; 1.6 oz/A Londax, June 20; 15 oz/A Clincher + 1 qt/A COC, June 20
- **Insecticides** ..... : 4 oz/A Karate, June 20 and August 5
- **Fungicides** ..... : 12 oz/A Quadris, July 30

LSU AgCenter
Rice Research Station
Rice Response to Seeding and Nitrogen Rates 2

Trial ID: 05-MP-03
Location: Rice Research Station

Crop Name							Rice	Rice	Rice	Rice	Rice
Rating Date								14-Sep-2005	14-Sep-2005		
Rating Data Type							50% Head	Height	Yield	Head Rice	Total Mil
Rating Unit							days	inches	lb/A	%	%
Crop Stage							Main	Main	Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
1	Cheniere						85	30	3812	60	70
1	7.5 seeds/square foot										
1	Urea	46	GR	60	LB AI/A	Preflood					
2	Cheniere						86	31	6028	62	70
2	7.5 seeds/square foot										
2	Urea	46	GR	120	LB AI/A	Preflood					
3	Cheniere						86	32	7116	62	69
3	7.5 seeds/square foot										
3	Urea	46	GR	180	LB AI/A	Preflood					
4	Cheniere						83	29	5774	61	70
4	15 seeds/square foot										
4	Urea	46	GR	60	LB AI/A	Preflood					
5	Cheniere						84	32	7209	62	70
5	15 seeds/square foot										
5	Urea	46	GR	120	LB AI/A	Preflood					
6	Cheniere						86	33	7880	62	69
6	15 seeds/square foot										
6	Urea	46	GR	180	LB AI/A	Preflood					
7	Cheniere						81	29	6524	62	70
7	30 seeds/square foot										
7	Urea	46	GR	60	LB AI/A	Preflood					
8	Cheniere						83	30	7576	63	70
8	30 seeds/square foot										
8	Urea	46	GR	120	LB AI/A	Preflood					
9	Cheniere						85	33	8765	63	70
9	30 seeds/square foot										
9	Urea	46	GR	180	LB AI/A	Preflood					
10	Cheniere						79	29	6650	63	69
10	60 seeds/square foot										
10	Urea	46	GR	60	LB AI/A	Preflood					
11	Cheniere						82	31	8155	62	70
11	60 seeds/square foot										
11	Urea	46	GR	120	LB AI/A	Preflood					
12	Cheniere						83	33	8575	63	70
12	60 seeds/square foot										
12	Urea	46	GR	180	LB AI/A	Preflood					
13	CL131						79	28	5007	60	69
13	7.5 seeds/square foot										
13	Urea	46	GR	60	LB AI/A	Preflood					

LSU AgCenter
Rice Research Station
Rice Response to Seeding and Nitrogen Rates 2

Trial ID: 05-MP-03
Location: Rice Research Station

Crop Name							Rice	Rice	Rice	Rice	Rice
Rating Date								14-Sep-2005	14-Sep-2005		
Rating Data Type							50% Head	Height	Yield	Head Rice	Total Mill
Rating Unit							days	inches	lb/A	%	%
Crop Stage							Main	Main	Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
14	CL131						80	29	6845	63	70
14	7.5 seeds/square foot										
14	Urea	46	GR	120	LB AI/A	Preflood					
15	CL131						82	30	7188	63	70
15	7.5 seeds/square foot										
15	Urea	46	GR	180	LB AI/A	Preflood					
16	CL131						79	26	6013	61	68
16	15 seeds/square foot										
16	Urea	46	GR	60	LB AI/A	Preflood					
17	CL131						80	28	7163	65	69
17	15 seeds/square foot										
17	Urea	46	GR	120	LB AI/A	Preflood					
18	CL131						81	31	7976	63	69
18	15 seeds/square foot										
18	Urea	46	GR	180	LB AI/A	Preflood					
19	CL131						78	26	6333	59	69
19	30 seeds/square foot										
19	Urea	46	GR	60	LB AI/A	Preflood					
20	CL131						80	28	7323	44	47
20	30 seeds/square foot										
20	Urea	46	GR	120	LB AI/A	Preflood					
21	CL131						81	30	8202	64	70
21	30 seeds/square foot										
21	Urea	46	GR	180	LB AI/A	Preflood					
22	CL131						78	26	6114	63	70
22	60 seeds/square foot										
22	Urea	46	GR	60	LB AI/A	Preflood					
23	CL131						80	28	7310	65	70
23	60 seeds/square foot										
23	Urea	46	GR	120	LB AI/A	Preflood					
24	CL131						81	28	7693	63	70
24	60 seeds/square foot										
24	Urea	46	GR	180	LB AI/A	Preflood					
25	Wells						82	31	4106	40	67
25	7.5 seeds/square foot										
25	Urea	46	GR	60	LB AI/A	Preflood					
26	Wells						84	35	5548	46	68
26	7.5 seeds/square foot										
26	Urea	46	GR	120	LB AI/A	Preflood					

LSU AgCenter
Rice Research Station
Rice Response to Seeding and Nitrogen Rates 2

Trial ID: 05-MP-03
Location: Rice Research Station

Crop Name							Rice	Rice	Rice	Rice	Rice
Rating Date								14-Sep-2005	14-Sep-2005		
Rating Data Type							50% Head	Height	Yield	Head Rice	Total Mill
Rating Unit							days	inches	lb/A	%	%
Crop Stage							Main	Main	Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
27	Wells						86	35	6645	56	69
27	7.5 seeds/square foot										
27	Urea	46	GR	180	LB AI/A	Preflood					
28	Wells						80	31	4762	43	69
28	15 seeds/square foot										
28	Urea	46	GR	60	LB AI/A	Preflood					
29	Wells						82	35	6833	49	68
29	15 seeds/square foot										
29	Urea	46	GR	120	LB AI/A	Preflood					
30	Wells						84	37	7652	55	70
30	15 seeds/square foot										
30	Urea	46	GR	180	LB AI/A	Preflood					
31	Wells						79	31	5669	45	69
31	30 seeds/square foot										
31	Urea	46	GR	60	LB AI/A	Preflood					
32	Wells						81	34	6391	48	69
32	30 seeds/square foot										
32	Urea	46	GR	120	LB AI/A	Preflood					
33	Wells						83	37	8112	54	70
33	30 seeds/square foot										
33	Urea	46	GR	180	LB AI/A	Preflood					
34	Wells						79	29	5831	46	69
34	60 seeds/square foot										
34	Urea	46	GR	60	LB AI/A	Preflood					
35	Wells						80	34	7514	50	70
35	60 seeds/square foot										
35	Urea	46	GR	120	LB AI/A	Preflood					
36	Wells						82	36	8483	54	70
36	60 seeds/square foot										
36	Urea	46	GR	180	LB AI/A	Preflood					
LSD (P=.05)							1.3	1.4	720.4	10.8	11.0
Standard Deviation							0.9	1.0	514.6	6.6	6.8
CV							1.15	3.34	7.57	11.58	9.84
Replicate F							2.998	19.600	4.223	1.792	1.695
Replicate Prob(F)							0.0340	0.0001	0.0074	0.1742	0.1910
Treatment F							26.102	35.114	22.545	3.963	0.967
Treatment Prob(F)							0.0001	0.0001	0.0001	0.0001	0.5318

Rice Response to Seeding Rate and Early-Season Nitrogen Fertilizer 1

Experiment number ..... : 05-CM-20

Site and design ..... :
- **Location/Cooperator** ..... : Rice Research Station (South Unit)
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** ..... : 4
- **Plot size** ..... : 7 x 20 ft
- **Row width/rows per plot** ..... : 7 in / 12

Soil type ..... : Crowley silt loam
- **% organic matter** ..... : 1.63
- **pH** ..... : 6.8
- **Extractable nutrients** ..... : P-46; K-148; Na-174; Ca-1509; Mg-401; Zn-3.9; Fe-67 ppm

Crop/Variety ..... : Rice / multiple
- **Planting method/date** ..... : Drill seeded / April 4
- **Seeding rate/depth** ..... : Multiple / 1 in
- **Emergence date** ..... : April 30
- **Harvest date** ..... : August 26

Fertilization ..... : 300 lb/A 0-24-24, September 20, 2004; 360 lb/A 46-0-0, May 23

Water management ..... :
- **Flush** ..... : April 7, 19, 28, May 5, 11
- **Flood** ..... : May 24
- **Drain** ..... : August 17

Pest management ..... :
- **Herbicides** ..... : 4 qt/A Stam + 0.75 oz/A Permit, May 4; 1.5 pt/A Basagran + 1qt/A COC, May 16; 15 oz/A Clincher + 1 qt/A COC, June 1 and 29
- **Insecticides** ..... : 1oz/A Icon, April 4
- **Fungicides** ..... : None

Treatment Application

Application Description: 05-CM-20

	A
Date ..... :	May 2
Time of day..... :	8:00 am
Application method ..... :	Broadcast
Application timing ..... :	2 leaf
Placement ..... :	Soil
Air temperature ..... :	56
Relative humidity (%)..... :	50
Wind (mph/direction)..... :	4-5 E
Dew presence (Y/N) ..... :	N
Soil temperature ..... :	60
Soil moisture..... :	Wet
Cloud cover (%) ..... :	5
Applied by ..... :	JB, JL, RR

Application Equipment:

Equipment..... :	Hand
Operating pressure..... :	NA
Nozzle type/size ..... :	NA
Nozzle spacing/no...... :	NA
Boom height ..... :	NA
Ground speed (mph) ..... :	NA
Incorporation & depth ..... :	NA

Crop Stage at Application:

Height ..... :	3 in
No. leaves/tillers ..... :	1-3 leaf

LSU AgCenter
Rice Research Station
Rice Response to Seeding Rate and Early-Season Nitrogen Fertilizer 1

Trial ID: 05-CM-20
Location: Rice Research Station

Crop Name							Rice	Rice	Rice
Rating Date							10-May-2005		23-Aug-2005
Rating Data Type							Density	50% Head	Height
Rating Unit							Pl/sq. m	days	inches
Crop Stage							Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	Cheniere						23	87	30
1	7.5 seeds/square foot								
1	Ammonium sulfate	21	GR	0	LB AI/A	2-leaf rice			
2	Cheniere						27	88	30
2	7.5 seeds/square foot								
2	Ammonium sulfate	21	GR	21	LB AI/A	2-leaf rice			
3	Cheniere						54	84	31
3	15 seeds/square foot								
3	Ammonium sulfate	21	GR	0	LB AI/A	2-leaf rice			
4	Cheniere						49	85	31
4	15 seeds/square foot								
4	Ammonium sulfate	21	GR	21	LB AI/A	2-leaf rice			
5	Cheniere						132	83	31
5	30 seeds/square foot								
5	Ammonium sulfate	21	GR	0	LB AI/A	2-leaf rice			
6	Cheniere						117	84	31
6	30 seeds/square foot								
6	Ammonium sulfate	21	GR	21	LB AI/A	2-leaf rice			
7	Cheniere						172	82	32
7	60 seeds/square foot								
7	Ammonium sulfate	21	GR	0	LB AI/A	2-leaf rice			
8	Cheniere						194	82	32
8	60 seeds/square foot								
8	Ammonium sulfate	21	GR	21	LB AI/A	2-leaf rice			
9	Wells						37	88	36
9	7.5 seeds/square foot								
9	Ammonium sulfate	21	GR	0	LB AI/A	2-leaf rice			
10	Wells						32	88	35
10	7.5 seeds/square foot								
10	Ammonium sulfate	21	GR	21	LB AI/A	2-leaf rice			
11	Wells						63	86	38
11	15 seeds/square foot								
11	Ammonium sulfate	21	GR	0	LB AI/A	2-leaf rice			
12	Wells						60	87	36
12	15 seeds/square foot								
12	Ammonium sulfate	21	GR	21	LB AI/A	2-leaf rice			
13	Wells						135	85	37
13	30 seeds/square foot								
13	Ammonium sulfate	21	GR	0	LB AI/A	2-leaf rice			

LSU AgCenter
Rice Research Station
Rice Response to Seeding Rate and Early-Season Nitrogen Fertilizer 1

Trial ID: 05-CM-20
Location: Rice Research Station

Crop Name							Rice	Rice	Rice
Rating Date							10-May-2005		23-Aug-2005
Rating Data Type							Density	50% Head	Height
Rating Unit							Pl/sq. m	days	inches
Crop Stage							Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
14	Wells						128	86	37
14	30 seeds/square foot								
14	Ammonium sulfate	21	GR	21	LB AI/A	2-leaf rice			
15	Wells						219	84	38
15	60 seeds/square foot								
15	Ammonium sulfate	21	GR	0	LB AI/A	2-leaf rice			
16	Wells						199	85	37
16	60 seeds/square foot								
16	Ammonium sulfate	21	GR	21	LB AI/A	2-leaf rice			
LSD (P=.05)							46.7	1.4	1.8
Standard Deviation							32.7	1.0	1.3
CV							31.92	1.17	3.81
Replicate F							1.117	6.174	0.437
Replicate Prob(F)							0.3522	0.0013	0.7277
Treatment F							17.120	15.167	22.717
Treatment Prob(F)							0.0001	0.0001	0.0001

LSU AgCenter
Rice Research Station
Rice Response to Seeding Rate and Early-Season Nitrogen Fertilizer 1

Trial ID: 05-CM-20
Location: Rice Research Station

Crop Name							Rice	Rice	Rice
Rating Date							25-Aug-2005		
Rating Data Type							Yield	Head Rice	Total Mill
Rating Unit							lb/A	%	%
Crop Stage							Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	Cheniere						2310	63	68
1	7.5 seeds/square foot								
1	Ammonium sulfate	21	GR	0	LB AI/A	2-leaf rice			
2	Cheniere						2165	65	70
2	7.5 seeds/square foot								
2	Ammonium sulfate	21	GR	21	LB AI/A	2-leaf rice			
3	Cheniere						4369	65	70
3	15 seeds/square foot								
3	Ammonium sulfate	21	GR	0	LB AI/A	2-leaf rice			
4	Cheniere						3952	62	68
4	15 seeds/square foot								
4	Ammonium sulfate	21	GR	21	LB AI/A	2-leaf rice			
5	Cheniere						5560	65	69
5	30 seeds/square foot								
5	Ammonium sulfate	21	GR	0	LB AI/A	2-leaf rice			
6	Cheniere						4522	62	67
6	30 seeds/square foot								
6	Ammonium sulfate	21	GR	21	LB AI/A	2-leaf rice			
7	Cheniere						6188	65	69
7	60 seeds/square foot								
7	Ammonium sulfate	21	GR	0	LB AI/A	2-leaf rice			
8	Cheniere						6450	64	68
8	60 seeds/square foot								
8	Ammonium sulfate	21	GR	21	LB AI/A	2-leaf rice			
9	Wells						4292	61	68
9	7.5 seeds/square foot								
9	Ammonium sulfate	21	GR	0	LB AI/A	2-leaf rice			
10	Wells						4482	60	68
10	7.5 seeds/square foot								
10	Ammonium sulfate	21	GR	21	LB AI/A	2-leaf rice			
11	Wells						7032	62	69
11	15 seeds/square foot								
11	Ammonium sulfate	21	GR	0	LB AI/A	2-leaf rice			
12	Wells						6348	62	70
12	15 seeds/square foot								
12	Ammonium sulfate	21	GR	21	LB AI/A	2-leaf rice			
13	Wells						8064	60	68
13	30 seeds/square foot								
13	Ammonium sulfate	21	GR	0	LB AI/A	2-leaf rice			

LSU AgCenter
Rice Research Station
Rice Response to Seeding Rate and Early-Season Nitrogen Fertilizer 1

Trial ID: 05-CM-20
Location: Rice Research Station

Crop Name							Rice	Rice	Rice
Rating Date							25-Aug-2005		
Rating Data Type							Yield	Head Rice	Total Mill
Rating Unit							lb/A	%	%
Crop Stage							Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
14	Wells						7902	61	69
14	30 seeds/square foot								
14	Ammonium sulfate	21	GR	21	LB AI/A	2-leaf rice			
15	Wells						9129	61	69
15	60 seeds/square foot								
15	Ammonium sulfate	21	GR	0	LB AI/A	2-leaf rice			
16	Wells						8074	61	69
16	60 seeds/square foot								
16	Ammonium sulfate	21	GR	21	LB AI/A	2-leaf rice			
LSD (P=.05)							1337.0	3.1	2.8
Standard Deviation							935.6	1.9	1.7
CV							16.48	2.98	2.41
Replicate F							2.458	4.255	8.104
Replicate Prob(F)							0.0751	0.0236	0.0015
Treatment F							19.652	2.913	0.804
Treatment Prob(F)							0.0001	0.0062	0.6651

Rice Response to Seeding Rate and Early-Season Nitrogen Fertilizer 2

Experiment number ..... : 05-MP-04

Site and design ..... :
- **Location/Cooperator** ..... : Morehouse Parish / Zaunbrecher Farm (Roland Crymes cooperating)
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** ..... : 4
- **Plot size** ..... : 7 x 20 ft
- **Row width/rows per plot** ..... : 7 in / 12

Soil type ..... : Hebert silty clay
- **% organic matter** ..... : 3.41
- **pH** ..... : 6.3
- **Extractable nutrients** ..... : P-77; K-302; Na-181; Ca-3210; Mg-972; Zn-4.1; Fe-139 ppm

Crop/Variety ..... : Rice / Multiple
- **Planting method/date** ..... : Drill seeded / April 28
- **Seeding rate/depth** ..... : Multiple / 0.5 in
- **Emergence date** ..... : May 14
- **Harvest date** ..... : September 13

Fertilization ..... : 360 lb/A 46-0-0 preflood, June 8

Water management ..... :
- **Flush** ..... : May 6, 13, 23
- **Flood** ..... : June 15
- **Drain** ..... : August 30

Pest management ..... :
- **Herbicides** ..... : 13 oz/A Clincher + 1 qt/A COC, May 26; 1.6 oz/A Londax, June 20; 15 oz/A Clincher + 1 qt/A COC, June 20
- **Insecticides** ..... : 4 oz/A Karate, June 20 and August 5
- **Fungicides** ..... : 12 oz/A Quadris, July 30

LSU AgCenter
Rice Research Station
Rice Response to Seeding Rate and Early-Season Nitrogen Fertilizer 2

Trial ID: 05-MP-04
Location: Morehouse Parish

Crop Name							Rice	Rice	Rice	Rice	Rice
Rating Date								13-Sep-2005	14-Sep-2005		
Rating Data Type							50% Head	Height	Yield	Head Rice	Total Mill
Rating Unit							days	inches	lb/A	%	%
Crop Stage							Main	Main	Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
1	Cheniere						85	33	6968	63	69
1	7.5 seeds/square foot										
1	Ammonium sulfate	21	GR	0	LB AI/A	2-leaf rice					
2	Cheniere						85	32	7611	62	69
2	7.5 seeds/square foot										
2	Ammonium sulfate	21	GR	21	LB AI/A	2-leaf rice					
3	Cheniere						85	33	8083	62	68
3	15 seeds/square foot										
3	Ammonium sulfate	21	GR	0	LB AI/A	2-leaf rice					
4	Cheniere						84	33	8072	60	68
4	15 seeds/square foot										
4	Ammonium sulfate	21	GR	21	LB AI/A	2-leaf rice					
5	Cheniere						84	32	8194	62	69
5	30 seeds/square foot										
5	Ammonium sulfate	21	GR	0	LB AI/A	2-leaf rice					
6	Cheniere						83	33	8756	62	69
6	30 seeds/square foot										
6	Ammonium sulfate	21	GR	21	LB AI/A	2-leaf rice					
7	Cheniere						83	33	8400	62	70
7	60 seeds/square foot										
7	Ammonium sulfate	21	GR	0	LB AI/A	2-leaf rice					
8	Cheniere						82	32	8492	62	69
8	60 seeds/square foot										
8	Ammonium sulfate	21	GR	21	LB AI/A	2-leaf rice					
9	Wells						84	37	6948	52	69
9	7.5 seeds/square foot										
9	Ammonium sulfate	21	GR	0	LB AI/A	2-leaf rice					
10	Wells						83	36	6731	55	70
10	7.5 seeds/square foot										
10	Ammonium sulfate	21	GR	21	LB AI/A	2-leaf rice					
11	Wells						83	36	7320	52	70
11	15 seeds/square foot										
11	Ammonium sulfate	21	GR	0	LB AI/A	2-leaf rice					
12	Wells						83	36	7552	53	70
12	15 seeds/square foot										
12	Ammonium sulfate	21	GR	21	LB AI/A	2-leaf rice					
13	Wells						82	36	7917	51	71
13	30 seeds/square foot										
13	Ammonium sulfate	21	GR	0	LB AI/A	2-leaf rice					

LSU AgCenter
Rice Research Station
Rice Response to Seeding Rate and Early-Season Nitrogen Fertilizer 2

Trial ID: 05-MP-04
Location: Morehouse Parish

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Rice 50% Head days Main	Rice 13-Sep-2005 Height inches Main	Rice 14-Sep-2005 Yield lb/A Main	Rice Head Rice % Main	Rice Total Mill % Main
14	Wells						81	37	8291	52	71
14	30 seeds/square foot										
14	Ammonium sulfate	21	GR	21	LB AI/A	2-leaf rice					
15	Wells						82	36	8712	52	70
15	60 seeds/square foot										
15	Ammonium sulfate	21	GR	0	LB AI/A	2-leaf rice					
16	Wells						81	37	8551	52	70
16	60 seeds/square foot										
16	Ammonium sulfate	21	GR	21	LB AI/A	2-leaf rice					
LSD (P=.05)							1.0	0.8	700.1	2.7	1.4
Standard Deviation							0.7	0.6	489.9	1.6	0.8
CV							0.85	1.65	6.19	2.79	1.2
Replicate F							7.793	3.422	0.234	8.699	0.268
Replicate Prob(F)							0.0003	0.0250	0.8723	0.0010	0.7664
Treatment F							13.911	49.605	7.112	29.062	2.527
Treatment Prob(F)							0.0001	0.0001	0.0001	0.0001	0.0149

Grain Drill Comparison

Experiment number ..... : 05-CS-12

Site and design ..... :
- **Location/Cooperator** ..... : Rice Research Station (South Unit)
- **Tillage type** ..... : Conventional / Stale seedbed
- **Experimental design** ..... : Randomized complete block
- **Number of reps** ..... : 4
- **Plot size** ..... : 9 x 100 ft
- **Row width/rows per plot** ..... : 7.5 in / 14

Soil type ..... : Crowley silt loam
- **% organic matter** ..... : 2.32
- **pH** ..... : 6.6
- **Extractable nutrients** ..... : P-89; K-190; Na-172; Ca-2106; Mg-642; Zn-6.3; Fe-90 ppm

Crop/Variety ..... : Rice / Cocodrie
- **Planting method/date** ..... : Drill seeded / April 19
- **Seeding rate/depth** ..... : Multiple / 1 in
- **Emergence date** ..... : April 30
- **Harvest date** ..... : August 18

Fertilization ..... : 300 lb/A 0-24-24, September 20, 2004; 360 lb/A 46-0-0 preflood, June 1

Water management ..... :
- **Flush** ..... : April 19, 28, May 5, 11, 23
- **Flood** ..... : June 2
- **Drain** ..... : August 4

Pest management ..... :
- **Herbicides** ..... : 4 qt/A Stam + 0.75 oz/A Permit, May 4; 1 oz/A Londax + 15 oz/A Clincher + 1 qt/A COC, May 27; 15 oz/A Clincher + 1 qt/A COC June 29
- **Insecticides** ..... : 1 oz Icon seed treatment
- **Fungicides** ..... : None

LSU AgCenter
Rice Research Station
Grain Drill Comparison

Trial ID: 05-CS-12
Location: RRS-South Unit

Crop Name		Rice	Rice	Rice	Rice
Rating Date		1-Jun-2005		18-Aug-2005	18-Aug-2005
Rating Data Type		Density	50% Head	Height	Yield
Rating Unit		Pl/sq m	days	inches	lb/A
Crop Stage		Main	Main	Main	Main
Trt No.	Treatment Name				
1	Stale seedbed	43	79	33	6215
1	John Deere 1590				
1	60 lb/A				
2	Stale seedbed	72	77	34	6750
2	John Deere 1590				
2	100 lb/A				
3	Stale seedbed	64	77	33	6832
3	Great Plains 1520				
3	60 lb/A				
4	Stale seedbed	89	76	33	7245
4	Great Plains 1520				
4	100 lb/A				
5	Conventional tillage	74	79	33	6746
5	John Deere 1590				
5	60 lb/A				
6	Conventional tillage	103	78	33	7065
6	John Deere 1590				
6	100 lb/A				
7	Conventional tillage	87	79	33	6707
7	Great Plains 1520				
7	60 lb/A				
8	Conventional tillage	124	78	33	7213
8	Great Plains 1520				
8	100 lb/A				
LSD (P=.05)		10.5	0.7	1.3	280.7
Standard Deviation		7.1	0.5	0.7	190.9
CV		8.7	0.59	2.24	2.79
Replicate F		0.532	3.400	0.304	8.536
Replicate Prob(F)		0.6656	0.0367	0.7424	0.0007
Treatment F		47.413	22.200	1.000	12.212
Treatment Prob(F)		0.0001	0.0001	0.4706	0.0001

Rice-Based Cropping Systems in No-Till Production

Experiment number ..... : 05-CS-15

Site and design ..... :
- **Location/Cooperator** ..... : Rice Research Station (South Unit)
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** ..... : 4
- **Plot size** ..... : 20 x 50 ft
- **Row width/rows per plot** ..... : 7 in / 35

Soil type ..... : Crowley silt loam
- **% organic matter** ..... : See data sheet
- **pH** ..... : See data sheet
- **Extractable nutrients** ..... : See data sheet

Crop/Variety ..... : Rice / Cheniere
- **Planting method/date** ..... : Drill seeded / April 13
- **Seeding rate/depth** ..... : 75 lb/A / 1 in
- **Emergence date** ..... : April 30
- **Harvest date** ..... : August 24

Fertilization ..... : 275 lb/A 0-24-24, April 13; 360 lb/A 46-0-0 preflood, May 23

Water management ..... :
- **Flush** ..... : April 20, 28, May 5, 12
- **Flood** ..... : May 25
- **Drain** ..... : August 10

Pest management ..... :
- **Herbicides** ..... : 0.75 oz/A Permit + 4 qt/A Stam, April 21; 4 qt/A Arrosolo, May 4
- **Insecticides** ..... : 1 oz Icon seed treatment
- **Fungicides** ..... : None

LSU AgCenter
Rice Research Station
Rice-Based Cropping Systems in No-Till Production

Trial ID: 05-CS-15
Location: Rice Research Station

Crop Name		Rice	Rice	Rice	Rice	Rice	Rice
Rating Date							
Rating Data Type		50% Head	Yield	pH	pH	Calcium	Calcium
Rating Unit		days	lb/A			ppm	ppm
Trt-Eval Interval				Spring 2005	Fall 2005	Spring 2005	Fall 2005
Trt No.	Treatment Name						
1	Continuous Rice	79	7994	7.2	7.5	1962	2087
2	1:1 Rice-Soybean	79	8081	7.0	7.4	1955	1983
3	1:1 Rice-Grain Sorghum	79	8207	7.1	7.4	2081	2080
4	1:1 Rice-Fallow Ground	79	8062	7.1	7.6	1987	2054
LSD (P=.05)		0.0	147.9	0.10	0.19	166.9	180.1
Standard Deviation		0.0	92.5	0.06	0.12	104.4	112.6
CV		0.0	1.14	0.9	1.57	5.23	5.49
Replicate F		0.000	10.797	34.414	6.626	28.876	23.437
Replicate Prob(F)		1.0000	0.0024	0.0001	0.0118	0.0001	0.0001
Treatment F		0.000	3.699	5.361	1.888	1.228	0.718
Treatment Prob(F)		1.0000	0.0554	0.0216	0.2020	0.3550	0.5660

Crop Name		Rice	Rice	Rice	Rice	Rice	Rice
Rating Date							
Rating Data Type		Copper	Copper	Magnesium	Magnesium	Phosphorus	Phosphorus
Rating Unit		ppm	ppm	ppm	ppm	ppm	ppm
Trt-Eval Interval		Spring 2005	Fall 2005	Spring 2005	Fall 2005	Spring 2005	Fall 2005
Trt No.	Treatment Name						
1	Continuous Rice	2.12	1.78	207	236	71	62
2	1:1 Rice-Soybean	2.01	1.65	221	236	75	66
3	1:1 Rice-Grain Sorghum	2.01	1.84	233	258	72	72
4	1:1 Rice-Fallow Ground	2.03	1.84	222	246	71	66
LSD (P=.05)		0.145	0.397	20.3	28.5	19.0	17.2
Standard Deviation		0.090	0.248	12.7	17.8	11.9	10.7
CV		4.43	13.97	5.74	7.3	16.45	16.12
Grand Mean		2.04	1.78	220.92	243.99	72.18	66.64
Replicate F		6.306	1.433	2.748	2.783	7.408	3.407
Replicate Prob(F)		0.0136	0.2963	0.1047	0.1021	0.0084	0.0667
Treatment F		1.250	0.533	2.759	1.418	0.098	0.608
Treatment Prob(F)		0.3481	0.6713	0.1039	0.3003	0.9594	0.6261

LSU AgCenter
Rice Research Station
Rice-Based Cropping Systems in a No-Till Production System

Trial ID: 05-CS-15
Location: Rice Research Station

Crop Name		Rice	Rice	Rice	Rice	Rice	Rice
Rating Date							
Rating Data Type		Potassium	Potassium	Sodium	Sodium	Sulfur	Sulfur
Rating Unit		ppm	ppm	ppm	ppm	ppm	ppm
Trt-Eval Interval		Spring 2005	Fall 2005	Spring 2005	Fall 2005	Spring 2005	Fall 2005
Trt No.	Treatment Name						
1	Continuous Rice	91	71	29	151	7.27	13.36
2	1:1 Rice-Soybean	89	65	38	123	7.24	12.28
3	1:1 Rice-Grain Sorghum	93	73	48	137	7.77	11.86
4	1:1 Rice-Fallow Ground	94	63	42	129	7.37	11.78
LSD (P=.05)		10.1	15.4	12.7	53.6	1.199	3.135
Standard Deviation		6.3	9.6	7.9	33.5	0.750	1.960
CV		6.9	14.13	20.33	24.8	10.12	15.91
Replicate F		28.425	5.606	4.705	1.137	1.636	0.623
Replicate Prob(F)		0.0001	0.0191	0.0306	0.3853	0.2490	0.6176
Treatment F		0.559	0.879	4.128	0.523	0.429	0.554
Treatment Prob(F)		0.6555	0.4878	0.0426	0.6770	0.7370	0.6581

Crop Name		Rice	Rice
Rating Date			
Rating Data Type		Zinc	Zinc
Rating Unit		ppm	ppm
Trt-Eval Interval		Spring 2005	Fall 2005
Trt No.	Treatment Name		
1	Continuous Rice	11.71	6.57
2	1:1 Rice-Soybean	11.21	5.60
3	1:1 Rice-Grain Sorghum	15.15	9.32
4	1:1 Rice-Fallow Ground	11.16	6.11
LSD (P=.05)		8.791	6.328
Standard Deviation		5.496	3.956
CV		44.67	57.33
Replicate F		4.457	3.551
Replicate Prob(F)		0.0352	0.0608
Treatment F		0.484	0.706
Treatment Prob(F)		0.7018	0.5720

Rice-Based Cropping Systems in Conventional Tillage Production

Experiment number ..... : 05-CS-16

Site and design ..... :
- **Location/Cooperator** ..... : Rice Research Station (South Unit)
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** ..... : 4
- **Plot size** ..... : 20 x 50 ft
- **Row width/rows per plot** ..... : 7 in / 35

Soil type ..... : Crowley silt loam
- **% organic matter** ..... : See data sheet
- **pH** ..... : See data sheet
- **Extractable nutrients** ..... : See data sheet

Crop/Variety ..... : Rice / Cheniere
- **Planting method/date** ..... : Drill seeded / April 13
- **Seeding rate/depth** ..... : 75 lb/A / 1 in
- **Emergence date** ..... : April 30
- **Harvest date** ..... : August 24

Fertilization ..... : 275 lb/A 0-24-24, April 13; 360 lb/A 46-0-0 preflood, May 23

Water management ..... :
- **Flush** ..... : April 20, 28, May 5, 12
- **Flood** ..... : May 25
- **Drain** ..... : August 10

Pest management ..... :
- **Herbicides** ..... : 0.75 oz/A Permit + 4 qt/A Stam, April 21; 4 qt/A Arrosolo, May 4
- **Insecticides** ..... : 1 oz Icon seed treatment
- **Fungicides** ..... : None

LSU AgCenter
Rice Research Station
Rice-Based Cropping Systems in Conventional Tillage Production

Trial ID: 05-CS-16
Location: Rice Research Station

Crop Name		Rice	Rice	Rice	Rice	Rice	Rice
Rating Date							
Rating Data Type		50% Head	Yield	pH	pH	Calcium	Calcium
Rating Unit		days	lb/A			ppm	ppm
Crop Stage		Main	Main				
Trt-Eval Interval				Spring 2005	Fall 2005	Spring 2005	Fall 2005
Trt No.	Treatment Name						
1	Continuous Rice	80	8359	6.8	7.2	1844	1915
2	1:1 Rice-Soybean	80	7995	6.8	7.2	1919	1969
3	1:1 Rice-Grain Sorghum	80	8267	6.7	7.1	1875	1968
4	1:1 Rice-Fallow Ground	80	8329	6.7	7.1	1799	1932
LSD (P=.05)		0.0	401.2	0.31	0.29	261.6	254.8
Standard Deviation		0.0	250.9	0.20	0.18	163.5	159.3
CV		0.0	3.05	2.9	2.53	8.8	8.19
Replicate F		0.000	2.848	2.477	3.965	5.816	4.062
Replicate Prob(F)		1.0000	0.0975	0.1277	0.0470	0.0172	0.0443
Treatment F		0.000	1.753	0.091	0.268	0.383	0.116
Treatment Prob(F)		1.0000	0.2258	0.9630	0.8469	0.7676	0.9486

Crop Name		Rice	Rice	Rice	Rice	Rice	Rice
Rating Date							
Rating Data Type		Copper	Copper	Magnesium	Magnesium	Phosphorus	Phosphorus
Rating Unit		ppm	ppm	ppm	ppm	ppm	ppm
Crop Stage							
Trt-Eval Interval		Spring 2005	Fall 2005	Spring 2005	Fall 2005	Spring 2005	Fall 2005
Trt No.	Treatment Name						
1	Continuous Rice	2.17	1.67	276	303	61	64
2	1:1 Rice-Soybean	2.18	1.31	253	282	69	74
3	1:1 Rice-Grain Sorghum	2.19	1.76	279	306	57	63
4	1:1 Rice-Fallow Ground	2.21	1.73	275	300	60	59
LSD (P=.05)		0.249	0.488	69.6	62.7	23.6	23.2
Standard Deviation		0.156	0.305	43.5	39.2	14.7	14.5
CV		7.13	18.86	16.08	13.18	23.86	22.34
Replicate F		16.833	1.851	1.957	1.813	1.695	2.008
Replicate Prob(F)		0.0005	0.2082	0.1911	0.2148	0.2370	0.1834
Treatment F		0.046	1.857	0.307	0.299	0.552	0.736
Treatment Prob(F)		0.9862	0.2073	0.8196	0.8255	0.6592	0.5565

LSU AgCenter
Rice Research Station
Rice-Based Cropping Systems in a Conventional Tillage Production System

Trial ID: 05-CS-16
Location: Rice Research Station

Crop Name		Rice	Rice	Rice	Rice	Rice	Rice
Rating Date							
Rating Data Type		Potassium	Potassium	Sodium	Sodium	Sulfur	Sulfur
Rating Unit		ppm	ppm	ppm	ppm	ppm	ppm
Crop Stage							
Trt-Eval Interval		Spring 2005	Fall 2005	Spring 2005	Fall 2005	Spring 2005	Fall 2005
Trt No.	Treatment Name						
1	Continuous Rice	95	76	56	148	7.48	12.55
2	1:1 Rice-Soybean	92	81	67	155	8.29	12.95
3	1:1 Rice-Grain Sorghum	94	87	68	156	8.84	14.08
4	1:1 Rice-Fallow Ground	100	83	68	148	8.51	13.54
LSD (P=.05)		9.6	23.0	23.1	26.2	2.421	1.862
Standard Deviation		6.0	14.4	14.4	16.4	1.514	1.164
CV		6.3	17.52	22.34	10.8	18.28	8.77
Replicate F		10.681	2.500	4.146	2.755	2.437	8.684
Replicate Prob(F)		0.0025	0.1255	0.0421	0.1042	0.1316	0.0051
Treatment F		1.092	0.432	0.634	0.287	0.583	1.331
Treatment Prob(F)		0.4012	0.7354	0.6116	0.8334	0.6409	0.3240

Crop Name		Rice	Rice
Rating Date			
Rating Data Type		Zinc	Zinc
Rating Unit		ppm	ppm
Crop Stage			
Trt-Eval Interval		Spring 2005	Fall 2005
Trt No.	Treatment Name		
1	Continuous Rice	11.00	6.61
2	1:1 Rice-Soybean	15.72	9.14
3	1:1 Rice-Grain Sorghum	13.05	8.19
4	1:1 Rice-Fallow Ground	14.14	8.07
LSD (P=.05)		6.917	3.659
Standard Deviation		4.325	2.287
CV		32.09	28.58
Replicate F		4.677	4.838
Replicate Prob(F)		0.0311	0.0284
Treatment F		0.842	0.834
Treatment Prob(F)		0.5044	0.5084

Glyphosate Burndown Combinations for Rice

Experiment number ..... : 05-CS-13

Site and design ..... :
- **Location/Cooperator** ..... : Rice Research Station (South Unit)
- **Tillage type** ..... : Stale seedbed
- **Experimental design** ..... : Randomized complete block
- **Number of reps** ..... : 4
- **Plot size** ..... : 7 x 25 ft
- **Row width/rows per plot** ..... : 7 in / 12

Soil type ..... : Crowley silt loam
- **% organic matter** ..... : 1.93
- **pH** ..... : 6.5
- **Extractable nutrients** ..... : P-63; K-163; Na-211; Ca-1960; Mg-577; Zn-6.1; Fe-100 ppm

Crop/Variety ..... : Rice / Cocodrie
- **Planting method/date** ..... : Drill seeded / April 5
- **Seeding rate/depth** ..... : 33 seed/ft^2 / 1 in
- **Emergence date** ..... : April 22
- **Harvest date** ..... : August 18

Fertilization ..... : 300 lb/A 0-24-24, September 20, 2004; 360 lb/A 46-0-0 preflood, May 20

Water management ..... :
- **Flush** ..... : April 8, 14, 19, 28, May 5, 11
- **Flood** ..... : May 23
- **Drain** ..... : August 2

Pest management ..... :
- **Herbicides** ..... : 4 qt/A Stam + 0.75 oz/A Permit, May 4; 1.5 pt/A Basagran + 1qt/A COC, May 16; 15 oz/A Clincher + 1 qt/A COC, June 1 and 29
- **Insecticides** ..... : 1oz Icon seed treatment
- **Fungicides** ..... : None

LSU AgCenter
Rice Research Station
Glyphosate Burndown Combinations for Rice

Trial ID: 05-CS-13
Location: RRS-South Unit

Pest Code							FIMAN	FIMAN	FIMAN
Pest Name							Annual fringerush	Annual fringerush	Annual fringerush
Rating Date							15-Mar-2005	30-Mar-2005	6-Apr-2005
Rating Data Type							Control	Control	Control
Rating Unit							%	%	%
Crop Stage							Preplant	Preplant	Preplant
Trt-Eval Interval							14 DAT	28 DAT	35 DAT
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	Nontreatead						0	0	0
2	Valor	51	WDG	1	OZ/A	30 DPP	28	0	0
2	Agridex		L	1.25	% V/V	30 DPP			
2	Roundup Weathermax	5.5	L	0	OZ/A	30 DPP			
3	Valor	51	WDG	1	OZ/A	30 DPP	100	100	100
3	Agridex		L	1.25	% V/V	30 DPP			
3	Roundup Weathermax	5.5	L	23	OZ/A	30 DPP			
4	Valor	51	WDG	2	OZ/A	30 DPP	43	8	5
4	Agridex		L	1.25	% V/V	30 DPP			
4	Roundup Weathermax	5.5	L	0	OZ/A	30 DPP			
5	Valor	51	WDG	2	OZ/A	30 DPP	100	100	100
5	Agridex		L	1.25	% V/V	30 DPP			
5	Roundup Weathermax	5.5	L	23	OZ/A	30 DPP			
6	Harmony Extra	50	DF	0.5	OZ/A	30 DPP	20	13	5
6	Ag-98		L	0.25	% V/V	30 DPP			
6	Roundup Weathermax	5.5	L	0	OZ/A	30 DPP			
7	Harmony Extra	50	DF	0.5	OZ/A	30 DPP	100	100	100
7	Ag-98		L	0.25	% V/V	30 DPP			
7	Roundup Weathermax	5.5	L	23	OZ/A	30 DPP			
8	2,4-D	4	L	2	PT/A	30 DPP	10	5	3
8	Roundup Weathermax	5.5	L	0	OZ/A	30 DPP			
9	2,4-D	4	L	2	PT/A	30 DPP	79	100	100
9	Roundup Weathermax	5.5	L	23	OZ/A	30 DPP			
10	Grandstand	3	L	1	PT/A	30 DPP	0	0	0
10	Agridex		L	1.25	% V/V	30 DPP			
10	Roundup Weathermax	5.5	L	0	OZ/A	30 DPP			
11	Grandstand	3	L	1	PT/A	30 DPP	98	100	100
11	Agridex		L	1.25	% V/V	30 DPP			
11	Roundup Weathermax	5.5	L	23	OZ/A	30 DPP			
12	Tillage						0	0	100
LSD (P=.05)							20.0	9.0	5.2
Standard Deviation							13.8	6.2	3.6
CV							28.84	14.21	7.12
Replicate F							1.241	1.510	1.000
Treatment F							39.999	256.647	793.536
Treatment Prob(F)							0.0001	0.0001	0.0001

LSU AgCenter
Rice Research Station
Glyphosate Burndown Combinations for Rice

Trial ID: 05-CS-13
Location: RRS-South Unit

Pest Code							TJDPE	TJDPE	TJDPE
Pest Name							Venuslookingglass	Venuslookingglass	Venuslookingglass
Crop Name									
Rating Date							15-Mar-2005	30-Mar-2005	6-Apr-2005
Rating Data Type							Control	Control	Control
Rating Unit							%	%	%
Crop Stage							Preplant	Preplant	Preplant
Trt-Eval Interval							14 DAT	28 DAT	35 DAT
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	Nontreatead						0	0	0
2	Valor	51	WDG	1	OZ/A	30 DPP	56	48	35
2	Agridex		L	1.25	% V/V	30 DPP			
2	Roundup Weathermax	5.5	L	0	OZ/A	30 DPP			
3	Valor	51	WDG	1	OZ/A	30 DPP	96	100	100
3	Agridex		L	1.25	% V/V	30 DPP			
3	Roundup Weathermax	5.5	L	23	OZ/A	30 DPP			
4	Valor	51	WDG	2	OZ/A	30 DPP	66	90	83
4	Agridex		L	1.25	% V/V	30 DPP			
4	Roundup Weathermax	5.5	L	0	OZ/A	30 DPP			
5	Valor	51	WDG	2	OZ/A	30 DPP	96	100	100
5	Agridex		L	1.25	% V/V	30 DPP			
5	Roundup Weathermax	5.5	L	23	OZ/A	30 DPP			
6	Harmony Extra	50	DF	0.5	OZ/A	30 DPP	43	100	96
6	Ag-98		L	0.25	% V/V	30 DPP			
6	Roundup Weathermax	5.5	L	0	OZ/A	30 DPP			
7	Harmony Extra	50	DF	0.5	OZ/A	30 DPP	84	100	100
7	Ag-98		L	0.25	% V/V	30 DPP			
7	Roundup Weathermax	5.5	L	23	OZ/A	30 DPP			
8	2,4-D	4	L	2	PT/A	30 DPP	43	96	96
8	Roundup Weathermax	5.5	L	0	OZ/A	30 DPP			
9	2,4-D	4	L	2	PT/A	30 DPP	89	100	100
9	Roundup Weathermax	5.5	L	23	OZ/A	30 DPP			
10	Grandstand	3	L	1	PT/A	30 DPP	28	87	89
10	Agridex		L	1.25	% V/V	30 DPP			
10	Roundup Weathermax	5.5	L	0	OZ/A	30 DPP			
11	Grandstand	3	L	1	PT/A	30 DPP	83	100	100
11	Agridex		L	1.25	% V/V	30 DPP			
11	Roundup Weathermax	5.5	L	23	OZ/A	30 DPP			
12	Tillage						0	0	100
LSD (P=.05)							12.5	7.5	7.0
Standard Deviation							8.7	5.2	4.8
CV							15.23	6.78	5.8
Replicate F							4.206	0.550	0.420
Treatment F							64.246	222.217	176.591
Treatment Prob(F)							0.0001	0.0001	0.0001

LSU AgCenter
Rice Research Station
Glyphosate Burndown Combinations for Rice

Trial ID: 05-CS-13
Location: RRS-South Unit

Pest Code							SISBE	SISBE
Pest Name							Narrowleaf blueeyed-grass	Narrowleaf blueeyed-grass
Crop Name								
Rating Date							15-Mar-2005	30-Mar-2005
Rating Data Type							Control	Control
Rating Unit							%	%
Crop Stage							Preplant	Preplant
Trt-Eval Interval							14 DAT	28 DAT
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage		
1	Nontreatead						0	0
2	Valor	51	WDG	1	OZ/A	30 DPP	25	0
2	Agridex		L	1.25	% V/V	30 DPP		
2	Roundup Weathermax	5.5	L	0	OZ/A	30 DPP		
3	Valor	51	WDG	1	OZ/A	30 DPP	100	100
3	Agridex		L	1.25	% V/V	30 DPP		
3	Roundup Weathermax	5.5	L	23	OZ/A	30 DPP		
4	Valor	51	WDG	2	OZ/A	30 DPP	28	5
4	Agridex		L	1.25	% V/V	30 DPP		
4	Roundup Weathermax	5.5	L	0	OZ/A	30 DPP		
5	Valor	51	WDG	2	OZ/A	30 DPP	100	100
5	Agridex		L	1.25	% V/V	30 DPP		
5	Roundup Weathermax	5.5	L	23	OZ/A	30 DPP		
6	Harmony Extra	50	DF	0.5	OZ/A	30 DPP	10	3
6	Ag-98		L	0.25	% V/V	30 DPP		
6	Roundup Weathermax	5.5	L	0	OZ/A	30 DPP		
7	Harmony Extra	50	DF	0.5	OZ/A	30 DPP	100	100
7	Ag-98		L	0.25	% V/V	30 DPP		
7	Roundup Weathermax	5.5	L	23	OZ/A	30 DPP		
8	2,4-D	4	L	2	PT/A	30 DPP	10	5
8	Roundup Weathermax	5.5	L	0	OZ/A	30 DPP		
9	2,4-D	4	L	2	PT/A	30 DPP	100	100
9	Roundup Weathermax	5.5	L	23	OZ/A	30 DPP		
10	Grandstand	3	L	1	PT/A	30 DPP	0	0
10	Agridex		L	1.25	% V/V	30 DPP		
10	Roundup Weathermax	5.5	L	0	OZ/A	30 DPP		
11	Grandstand	3	L	1	PT/A	30 DPP	100	100
11	Agridex		L	1.25	% V/V	30 DPP		
11	Roundup Weathermax	5.5	L	23	OZ/A	30 DPP		
12	Tillage						0	0
LSD (P=.05)							7.5	6.4
Standard Deviation							5.2	4.4
CV							10.86	10.41
Replicate F							1.113	0.387
Treatment F							328.906	518.367
Treatment Prob(F)							0.0001	0.0001

LSU AgCenter
Rice Research Station
Glyphosate Burndown Combinations for Rice

Trial ID: 05-CS-13
Location: RRS-South Unit

Pest Code							MEDPO	MEDPO	MEDPO
Pest Name							California burclover	California burclover	California burclover
Rating Date							15-Mar-2005	30-Mar-2005	6-Apr-2005
Rating Data Type							Control	Control	Control
Rating Unit							%	%	%
Crop Stage							Preplant	Preplant	Preplant
Trt-Eval Interval							14 DAT	28 DAT	35 DAT
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	Nontreatead						0	0	0
2	Valor	51	WDG	1	OZ/A	30 DPP	45	38	28
2	Agridex		L	1.25	% V/V	30 DPP			
2	Roundup Weathermax	5.5	L	0	OZ/A	30 DPP			
3	Valor	51	WDG	1	OZ/A	30 DPP	99	100	100
3	Agridex		L	1.25	% V/V	30 DPP			
3	Roundup Weathermax	5.5	L	23	OZ/A	30 DPP			
4	Valor	51	WDG	2	OZ/A	30 DPP	55	60	35
4	Agridex		L	1.25	% V/V	30 DPP			
4	Roundup Weathermax	5.5	L	0	OZ/A	30 DPP			
5	Valor	51	WDG	2	OZ/A	30 DPP	98	99	100
5	Agridex		L	1.25	% V/V	30 DPP			
5	Roundup Weathermax	5.5	L	23	OZ/A	30 DPP			
6	Harmony Extra	50	DF	0.5	OZ/A	30 DPP	40	75	91
6	Ag-98		L	0.25	% V/V	30 DPP			
6	Roundup Weathermax	5.5	L	0	OZ/A	30 DPP			
7	Harmony Extra	50	DF	0.5	OZ/A	30 DPP	86	98	100
7	Ag-98		L	0.25	% V/V	30 DPP			
7	Roundup Weathermax	5.5	L	23	OZ/A	30 DPP			
8	2,4-D	4	L	2	PT/A	30 DPP	26	79	69
8	Roundup Weathermax	5.5	L	0	OZ/A	30 DPP			
9	2,4-D	4	L	2	PT/A	30 DPP	96	100	100
9	Roundup Weathermax	5.5	L	23	OZ/A	30 DPP			
10	Grandstand	3	L	1	PT/A	30 DPP	28	48	64
10	Agridex		L	1.25	% V/V	30 DPP			
10	Roundup Weathermax	5.5	L	0	OZ/A	30 DPP			
11	Grandstand	3	L	1	PT/A	30 DPP	90	100	100
11	Agridex		L	1.25	% V/V	30 DPP			
11	Roundup Weathermax	5.5	L	23	OZ/A	30 DPP			
12	Tillage						0	0	100
LSD (P=.05)							9.2	11.4	
Standard Deviation							6.4	7.9	
CV							11.59	11.88	
Replicate F							0.186	0.896	0.570
Treatment F							138.282	91.961	77.188
Treatment Prob(F)							0.0001	0.0001	0.0001

LSU AgCenter
Rice Research Station
Glyphosate Burndown Combinations for Rice

Trial ID: 05-CS-13
Location: RRS-South Unit

Pest Code									
Pest Name									
Crop Name							Rice	Rice	Rice
Rating Date								16-Aug-2005	18-Aug-2005
Rating Data Type							50% Head	Height	Yield
Rating Unit							days	inches	lb/A
Crop Stage							Main	Main	Main
Trt-Eval Interval									
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	Nontreatead						83	36	7763
2	Valor	51	WDG	1	OZ/A	30 DPP	85	36	7797
2	Agridex		L	1.25	% V/V	30 DPP			
2	Roundup Weathermax	5.5	L	0	OZ/A	30 DPP	7502		
3	Valor	51	WDG	1	OZ/A	30 DPP	88	37	7502
3	Agridex		L	1.25	% V/V	30 DPP			
3	Roundup Weathermax	5.5	L	23	OZ/A	30 DPP	8172		
4	Valor	51	WDG	2	OZ/A	30 DPP	85	37	8172
4	Agridex		L	1.25	% V/V	30 DPP			
4	Roundup Weathermax	5.5	L	0	OZ/A	30 DPP	7822		
5	Valor	51	WDG	2	OZ/A	30 DPP	88	37	7822
5	Agridex		L	1.25	% V/V	30 DPP			
5	Roundup Weathermax	5.5	L	23	OZ/A	30 DPP	7985		
6	Harmony Extra	50	DF	0.5	OZ/A	30 DPP	85	36	7985
6	Ag-98		L	0.25	% V/V	30 DPP			
6	Roundup Weathermax	5.5	L	0	OZ/A	30 DPP	8484		
7	Harmony Extra	50	DF	0.5	OZ/A	30 DPP	85	37	8484
7	Ag-98		L	0.25	% V/V	30 DPP			
7	Roundup Weathermax	5.5	L	23	OZ/A	30 DPP	8666		
8	2,4-D	4	L	2	PT/A	30 DPP	83	37	8666
8	Roundup Weathermax	5.5	L	0	OZ/A	30 DPP	8388		
9	2,4-D	4	L	2	PT/A	30 DPP	87	37	8388
9	Roundup Weathermax	5.5	L	23	OZ/A	30 DPP	8421		
10	Grandstand	3	L	1	PT/A	30 DPP	83	36	8421
10	Agridex		L	1.25	% V/V	30 DPP			
10	Roundup Weathermax	5.5	L	0	OZ/A	30 DPP	8067		
11	Grandstand	3	L	1	PT/A	30 DPP	87	37	8067
11	Agridex		L	1.25	% V/V	30 DPP			
11	Roundup Weathermax	5.5	L	23	OZ/A	30 DPP	7503		
12	Tillage						87	36	7503
298.8									
LSD (P=.05)							11.6	1.7	431.5
Standard Deviation							8.0	1.2	298.8
CV							10.86	1.35	3.71
Replicate F							4.346	0.388	0.550
Treatment F							9.284	1.741	6.662
Treatment Prob(F)							0.0001	0.1292	0.0001

Valor Burndown Application Timings

Experiment number ..... : 05-CS-14

Site and design ..... :
- **Location/Cooperator** ..... : Rice Research Station (South Unit)
- **Tillage type** ..... : Stale seedbed
- **Experimental design** ..... : Randomized complete block
- **Number of reps** ..... : 4
- **Plot size** ..... : 7 x 25 ft
- **Row width/rows per plot** ..... : 7 in / 12

Soil type ..... : Crowley silt loam
- **% organic matter** ..... : 1.93
- **pH** ..... : 6.5
- **Extractable nutrients** ..... : P-63; K-163; Na-211; Ca-1960; Mg-577; Zn-6.1; Fe-100 ppm

Crop/Variety ..... : Rice / Cocodrie
- **Planting method/date** ..... : Drill seeded / April 5
- **Seeding rate/depth** ..... : 33 seed/ft^2 / 1 in
- **Emergence date** ..... : April 22
- **Harvest date** ..... : August 18

Fertilization ..... : 300 lb/A 0-24-24, September 20, 2004; 360 lb/A 46-0-0 preflood, May 20

Water management ..... :
- **Flush** ..... : April 8, 14, 19, 28, May 5, 11
- **Flood** ..... : May 23
- **Drain** ..... : August 2

Pest management ..... :
- **Herbicides** ..... : 4 qt/A Stam + 0.75 oz/A Permit, May 4; 1.5 pt/A Basagran + 1qt/A COC, May 16; 15 oz/A Clincher + 1 qt/A COC, June 1 and 29
- **Insecticides** ..... : 1oz Icon seed treatment
- **Fungicides** ..... : None

LSU AgCenter
Rice Research Station
Valor Burndown Application Timings

Trial ID: 05-CS-14
Location: RRS-South Unit

Crop Name							Rice	Rice	Rice	Rice
Rating Date							9-May-2005		16-Aug-2005	18-Aug-2005
Rating Data Type							Population	50% Head	Height	Yield
Rating Unit							pl/m2	days	inches	lb/A
Crop Stage							Main	Main	Main	Main
Trt-Eval Interval										
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage				
1	Nontreated						190	83	36	7681
2	30 days preplant						159	84	36	8073
2	Valor	51	WDG	1	OZ/A	Preplant				
3	30 days preplant						151	85	37	7938
3	Valor	51	WDG	2	OZ/A	Preplant				
4	15 days preplant						142	84	37	8026
4	Valor	51	WDG	1	OZ/A	Preplant				
5	15 days preplant						116	84	37	7922
5	Valor	51	WDG	2	OZ/A	Preplant				
6	0 days preplant						52	88	36	6369
6	Valor	51	WDG	1	OZ/A	Preplant				
7	0 days preplant						44	90	35	5573
7	Valor	51	WDG	2	OZ/A	Preplant				
8	Tillage						165	85	36	7889
LSD (P=.05)							37.7	1.3	1.5	809.4
Standard Deviation							25.6	0.9	0.9	550.3
CV							20.18	1.07	2.36	7.4
Replicate F							1.249	3.878	6.203	4.205
Replicate Prob(F)							0.3174	0.0237	0.0118	0.0177
Treatment F							17.232	28.986	1.293	11.542
Treatment Prob(F)							0.0001	0.0001	0.3223	0.0001

Stale Seedbed Weed Management in Clearfield Rice

Experiment number ..... : 05-CS-20

Site and design ..... :
- **Location/Cooperator** ..... : Rice Research Station (South Unit)
- **Tillage type** ..... : Stale seedbed
- **Experimental design** ..... : Randomized complete block
- **Number of reps** ..... : 4
- **Plot size** ..... : 7 x 25 ft
- **Row width/rows per plot** ..... : 7 in / 12

Soil type ..... : Crowley silt loam
- **% organic matter** ..... : 1.93
- **pH** ..... : 6.5
- **Extractable nutrients** ..... : P-63; K-163; Na-211; Ca-1960; Mg-577; Zn-6.1; Fe-100 ppm

Crop/Variety ..... : Rice / CL131
- **Planting method/date** ..... : Drill seeded / April 5
- **Seeding rate/depth** ..... : 33 seed/ft^2 / 1 in
- **Emergence date** ..... : April 22
- **Harvest date** ..... : August 16

Fertilization ..... : 300 lb/A 0-24-24, September 20, 2004; 360 lb/A 46-0-0 preflood, May 20

Water management ..... :
- **Flush** ..... : April 8, 14, 19, 28, May 5, 11
- **Flood** ..... : May 23
- **Drain** ..... : August 2

Pest management ..... :
- **Herbicides** ..... : 15 oz/A Clincher + 1 qt/A COC, June 29
- **Insecticides** ..... : 1 oz Icon seed treatment
- **Fungicides** ..... : None

Treatment Application

Application Description: 05-CS-20

	A	B	C	D
Date ..... :	April 6	April 25	May 9	June 1
Time of day..... :	9:00 am	10:00 am	11:30 am	9:30 am
Application method ..... :	Broadcast	Broadcast	Broadcast	Broadcast
Application timing ..... :	Pre	1 leaf	3-4 leaf	4-5 tiller
Placement ..... :	Soil	Foliar	Foliar	Foliar
Air temperature ..... :	72	68	80	80
Relative humidity (%)..... :	61	65	75	70
Wind (mph/direction)..... :	5-6 S	3-4 SE	4-5 S	0
Dew presence (Y/N) ..... :	N	N	N	N
Soil temperature ..... :	65	68	70	NA
Soil moisture..... :	Wet	Dry	Wet	Flood
Cloud cover (%) ..... :	80	95	90	50
Applied by ..... :	JB	JB	JB	JB, RR

Application Equipment:

Equipment..... :	CO_2 backpack	CO_2 backpack	CO_2 backpack	CO_2 backpack
Operating pressure..... :	26 psi	30 psi	30 psi	26 psi
Nozzle type/size ..... :	Airmix 02	Airmix 02	Airmix 02	Airmix 015
Nozzle spacing/no...... :	20 in / 5	20 in / 5	20 in / 5	20 in / 5
Boom height ..... :	17 in	18 in	18 in	18 in
Ground speed (mph) ..... :	3	3	3	2
Incorporation & depth ..... :	NA	NA	NA	NA

Crop Stage at Application:

Height ..... :	NA	3-4 in	6 in	12 in
No. leaves/tillers ..... :	NA	1-2 leaf	3-4 leaf	4-5 tiller

LSU AgCenter
Rice Research Station
Stale Seedbed Weed Management in Clearfield Rice

Trial ID: 05-CS-20
Location: RRS-South Unit

Pest Code								ECHCG	ECHCG	ECHCG
Pest Name								Barnyardgrass	Barnyardgrass	Barnyardgrass
Crop Name							Rice	Rice	Rice	Rice
Rating Date							23-May-2005	9-May-2005	30-May-2005	28-Jun-2005
Rating Data Type							Injury	Control	Control	Control
Rating Unit							%	%	%	%
Crop Stage							Main	Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage				
1	Command	3	ME	1.07	PT/A	PRE	0	92	87	80
1	Permit	75	WG	1	OZ/A	3-4 leaf				
1	Ag-98		L	4.8	FL OZ/A	3-4 leaf				
2	Newpath	2	SL	4	FL OZ/A	1 leaf	0	93	96	93
2	Agridex		L	19.2	FL OZ/A	1 leaf				
2	Newpath	2	SL	4	FL OZ/A	3-4 leaf				
2	Permit	75	WG	1	OZ/A	3-4 leaf				
2	Agridex		L	19.2	FL OZ/A	3-4 leaf				
3	Newpath	2	SL	4	FL OZ/A	1 leaf	0	93	99	99
3	Agridex		L	19.2	FL OZ/A	1 leaf				
3	Newpath	2	SL	4	FL OZ/A	3-4 leaf				
3	Permit	75	WG	1	OZ/A	3-4 leaf				
3	Agridex		L	19.2	FL OZ/A	3-4 leaf				
3	Beyond	1	SL	5	FL OZ/A	4-5 tiller				
3	Agridex		L	19.2	FL OZ/A	4-5 tiller				
4	Command	3	ME	1.07	PT/A	PRE	0	95	89	76
4	Grasp	2	AS	1.98	FL OZ/A	PRE				
5	Command	3	ME	12.8	FL OZ/A	PRE	0	97	98	93
5	Newpath	2	AS	4	FL OZ/A	PRE				
5	Clearpath (BAS77201H)	75	WG	7.75	OZ/A	3-4 leaf				
5	Agridex		L	19.2	FL OZ/A	3-4 leaf				
6	Newpath	2	AS	4	FL OZ/A	1 leaf	0	91	97	99
6	Agridex		L	19.2	FL OZ/A	1 leaf				
6	Clearpath (BAS77201H)	75	WG	7.75	OZ/A	3-4 leaf				
6	Agridex		L	19.2	FL OZ/A	3-4 leaf				
6	Beyond	1	SL	5	FL OZ/A	4-5 tiller				
6	Agridex		L	19.2	FL OZ/A	4-5 tiller				
7	Newpath	2	SL	4	FL OZ/A	1 leaf	0	94	98	93
7	Agridex		L	19.2	FL OZ/A	1 leaf				
7	Newpath	2	SL	4	FL OZ/A	3-4 leaf				
7	Regiment	80	WP	0.4	OZ/A	3-4 leaf				
7	Kinetic		L	2.4	FL OZ/A	3-4 leaf				
8	Newpath	2	SL	4	FL OZ/A	1 leaf	0	95	96	93
8	Agridex		L	19.2	FL OZ/A	1 leaf				
8	Newpath	2	SL	4	FL OZ/A	3-4 leaf				
8	Londax	60	WP	1	OZ/A	3-4 leaf				
8	Agridex		L	19.2	FL OZ/A	3-4 leaf				
9	Regiment	80	WP	0.4	OZ/A	3-4 leaf	0		78	55
9	Command	3	ME	17	FL OZ/A	3-4 leaf				
9	Kinetic		L	2.4	FL OZ/A	3-4 leaf				
10	Nontreated						0	0	0	0
LSD (P=.05)							0.0	3.8	3.0	6.4
Standard Deviation							0.0	2.6	2.1	4.4
CV							0.0	3.11	2.48	5.61
Replicate F							0.000	0.841	0.965	0.440
Treatment F							0.000	582.481	846.485	194.373
Treatment Prob(F)							1.0000	0.0001	0.0001	0.0001

LSU AgCenter
Rice Research Station
Stale Seedbed Weed Management in Clearfield Rice

Trial ID: 05-CS-20
Location: RRS-South Unit

Pest Code							BRAPP	BRAPP	LEFPA
Pest Name							Broadleaf signalgras	Broadleaf signalgras	Amazon sprangletop
Crop Name							Rice	Rice	Rice
Rating Date							30-May-2005	28-Jun-2005	30-May-2005
Rating Data Type							Control	Control	Control
Rating Unit							%	%	%
Crop Stage							Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	Command	3	ME	1.07	PT/A	PRE	96	96	95
1	Permit	75	WG	1	OZ/A	3-4 leaf			
1	Ag-98		L	4.8	FL OZ/A	3-4 leaf			
2	Newpath	2	SL	4	FL OZ/A	1 leaf	98	96	90
2	Agridex		L	19.2	FL OZ/A	1 leaf			
2	Newpath	2	SL	4	FL OZ/A	3-4 leaf			
2	Permit	75	WG	1	OZ/A	3-4 leaf			
2	Agridex		L	19.2	FL OZ/A	3-4 leaf			
3	Newpath	2	SL	4	FL OZ/A	1 leaf	98	98	91
3	Agridex		L	19.2	FL OZ/A	1 leaf			
3	Newpath	2	SL	4	FL OZ/A	3-4 leaf			
3	Permit	75	WG	1	OZ/A	3-4 leaf			
3	Agridex		L	19.2	FL OZ/A	3-4 leaf			
3	Beyond	1	SL	5	FL OZ/A	4-5 tiller			
3	Agridex		L	19.2	FL OZ/A	4-5 tiller			
4	Command	3	ME	1.07	PT/A	PRE	93	95	91
4	Grasp	2	AS	1.98	FL OZ/A	PRE			
5	Command	3	ME	12.8	FL OZ/A	PRE	98	97	98
5	Newpath	2	AS	4	FL OZ/A	PRE			
5	Clearpath (BAS77201H)	75	WG	7.75	OZ/A	3-4 leaf			
5	Agridex		L	19.2	FL OZ/A	3-4 leaf			
6	Newpath	2	AS	4	FL OZ/A	1 leaf	96	99	89
6	Agridex		L	19.2	FL OZ/A	1 leaf			
6	Clearpath (BAS77201H)	75	WG	7.75	OZ/A	3-4 leaf			
6	Agridex		L	19.2	FL OZ/A	3-4 leaf			
6	Beyond	1	SL	5	FL OZ/A	4-5 tiller			
6	Agridex		L	19.2	FL OZ/A	4-5 tiller			
7	Newpath	2	SL	4	FL OZ/A	1 leaf	98	96	96
7	Agridex		L	19.2	FL OZ/A	1 leaf			
7	Newpath	2	SL	4	FL OZ/A	3-4 leaf			
7	Regiment	80	WP	0.4	OZ/A	3-4 leaf			
7	Kinetic		L	2.4	FL OZ/A	3-4 leaf			
8	Newpath	2	SL	4	FL OZ/A	1 leaf	99	95	95
8	Agridex		L	19.2	FL OZ/A	1 leaf			
8	Newpath	2	SL	4	FL OZ/A	3-4 leaf			
8	Londax	60	WP	1	OZ/A	3-4 leaf			
8	Agridex		L	19.2	FL OZ/A	3-4 leaf			
9	Regiment	80	WP	0.4	OZ/A	3-4 leaf	79	79	58
9	Command	3	ME	17	FL OZ/A	3-4 leaf			
9	Kinetic		L	2.4	FL OZ/A	3-4 leaf			
10	Nontreated						0	0	0
LSD (P=.05)							2.9	3.5	4.4
Standard Deviation							2.0	2.4	3.0
CV							2.36	2.86	3.73
Replicate F							0.688	1.534	0.812
Treatment F							920.078	625.528	414.202
Treatment Prob(F)							0.0001	0.0001	0.0001

LSU AgCenter
Rice Research Station
Stale Seedbed Weed Management in Clearfield Rice

Trial ID: 05-CS-20
Location: RRS-South Unit

Pest Code							LEFPA	ALTPH	ALTPH
Pest Name							Amazon sprangletop	Alligatorweed	Alligatorweed
Crop Name							Rice	Rice	Rice
Rating Date							28-Jun-2005	9-May-2005	30-May-2005
Rating Data Type							Control	Control	Control
Rating Unit							%	%	%
Crop Stage							Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	Command	3	ME	1.07	PT/A	PRE	75	88	82
1	Permit	75	WG	1	OZ/A	3-4 leaf			
1	Ag-98		L	4.8	FL OZ/A	3-4 leaf			
2	Newpath	2	SL	4	FL OZ/A	1 leaf	88	80	96
2	Agridex		L	19.2	FL OZ/A	1 leaf			
2	Newpath	2	SL	4	FL OZ/A	3-4 leaf			
2	Permit	75	WG	1	OZ/A	3-4 leaf			
2	Agridex		L	19.2	FL OZ/A	3-4 leaf			
3	Newpath	2	SL	4	FL OZ/A	1 leaf	92		91
3	Agridex		L	19.2	FL OZ/A	1 leaf			
3	Newpath	2	SL	4	FL OZ/A	3-4 leaf			
3	Permit	75	WG	1	OZ/A	3-4 leaf			
3	Agridex		L	19.2	FL OZ/A	3-4 leaf			
3	Beyond	1	SL	5	FL OZ/A	4-5 tiller			
3	Agridex		L	19.2	FL OZ/A	4-5 tiller			
4	Command	3	ME	1.07	PT/A	PRE	68	93	91
4	Grasp	2	AS	1.98	FL OZ/A	PRE			
5	Command	3	ME	12.8	FL OZ/A	PRE	88	70	99
5	Newpath	2	AS	4	FL OZ/A	PRE			
5	Clearpath (BAS77201H)	75	WG	7.75	OZ/A	3-4 leaf			
5	Agridex		L	19.2	FL OZ/A	3-4 leaf			
6	Newpath	2	AS	4	FL OZ/A	1 leaf	93	65	97
6	Agridex		L	19.2	FL OZ/A	1 leaf			
6	Clearpath (BAS77201H)	75	WG	7.75	OZ/A	3-4 leaf			
6	Agridex		L	19.2	FL OZ/A	3-4 leaf			
6	Beyond	1	SL	5	FL OZ/A	4-5 tiller			
6	Agridex		L	19.2	FL OZ/A	4-5 tiller			
7	Newpath	2	SL	4	FL OZ/A	1 leaf	91	68	97
7	Agridex		L	19.2	FL OZ/A	1 leaf			
7	Newpath	2	SL	4	FL OZ/A	3-4 leaf			
7	Regiment	80	WP	0.4	OZ/A	3-4 leaf			
7	Kinetic		L	2.4	FL OZ/A	3-4 leaf			
8	Newpath	2	SL	4	FL OZ/A	1 leaf	86	70	96
8	Agridex		L	19.2	FL OZ/A	1 leaf			
8	Newpath	2	SL	4	FL OZ/A	3-4 leaf			
8	Londax	60	WP	1	OZ/A	3-4 leaf			
8	Agridex		L	19.2	FL OZ/A	3-4 leaf			
9	Regiment	80	WP	0.4	OZ/A	3-4 leaf	3		91
9	Command	3	ME	17	FL OZ/A	3-4 leaf			
9	Kinetic		L	2.4	FL OZ/A	3-4 leaf			
10	Nontreated						0	0	0
LSD (P=.05)							7.4	7.9	4.7
Standard Deviation							5.1	5.0	3.2
CV							7.48	7.55	3.86
Replicate F							0.266	0.938	4.189
Treatment F							201.104	130.157	341.207
Treatment Prob(F)							0.0001	0.0001	0.0001

LSU AgCenter
Rice Research Station
Stale Seedbed Weed Management in Clearfield Rice

Trial ID: 05-CS-20
Location: RRS-South Unit

Pest Code							ALTPH			
Pest Name							Alligatorweed			
Crop Name							Rice	Rice	Rice	Rice
Rating Date							28-Jun-2005		16-Aug-2005	16-Aug-2005
Rating Data Type							Control	50% Head	Height	Yield
Rating Unit							%	days	inches	lb/A
Crop Stage							Main	Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage				
1	Command	3	ME	1.07	PT/A	PRE	85	82	31	6076
1	Permit	75	WG	1	OZ/A	3-4 leaf				
1	Ag-98		L	4.8	FL OZ/A	3-4 leaf				
2	Newpath	2	SL	4	FL OZ/A	1 leaf	91	82	31	7507
2	Agridex		L	19.2	FL OZ/A	1 leaf				
2	Newpath	2	SL	4	FL OZ/A	3-4 leaf				
2	Permit	75	WG	1	OZ/A	3-4 leaf				
2	Agridex		L	19.2	FL OZ/A	3-4 leaf				
3	Newpath	2	SL	4	FL OZ/A	1 leaf	96	82	32	7396
3	Agridex		L	19.2	FL OZ/A	1 leaf				
3	Newpath	2	SL	4	FL OZ/A	3-4 leaf				
3	Permit	75	WG	1	OZ/A	3-4 leaf				
3	Agridex		L	19.2	FL OZ/A	3-4 leaf				
3	Beyond	1	SL	5	FL OZ/A	4-5 tiller				
3	Agridex		L	19.2	FL OZ/A	4-5 tiller				
4	Command	3	ME	1.07	PT/A	PRE	88	81	30	6122
4	Grasp	2	AS	1.98	FL OZ/A	PRE				
5	Command	3	ME	12.8	FL OZ/A	PRE	93	82	30	7611
5	Newpath	2	AS	4	FL OZ/A	PRE				
5	Clearpath (BAS77201H)	75	WG	7.75	OZ/A	3-4 leaf				
5	Agridex		L	19.2	FL OZ/A	3-4 leaf				
6	Newpath	2	AS	4	FL OZ/A	1 leaf	97	82	31	7630
6	Agridex		L	19.2	FL OZ/A	1 leaf				
6	Clearpath (BAS77201H)	75	WG	7.75	OZ/A	3-4 leaf				
6	Agridex		L	19.2	FL OZ/A	3-4 leaf				
6	Beyond	1	SL	5	FL OZ/A	4-5 tiller				
6	Agridex		L	19.2	FL OZ/A	4-5 tiller				
7	Newpath	2	SL	4	FL OZ/A	1 leaf	95	82	30	7718
7	Agridex		L	19.2	FL OZ/A	1 leaf				
7	Newpath	2	SL	4	FL OZ/A	3-4 leaf				
7	Regiment	80	WP	0.4	OZ/A	3-4 leaf				
7	Kinetic		L	2.4	FL OZ/A	3-4 leaf				
8	Newpath	2	SL	4	FL OZ/A	1 leaf	95	82	31	7401
8	Agridex		L	19.2	FL OZ/A	1 leaf				
8	Newpath	2	SL	4	FL OZ/A	3-4 leaf				
8	Londax	60	WP	1	OZ/A	3-4 leaf				
8	Agridex		L	19.2	FL OZ/A	3-4 leaf				
9	Regiment	80	WP	0.4	OZ/A	3-4 leaf	93	81	30	4507
9	Command	3	ME	17	FL OZ/A	3-4 leaf				
9	Kinetic		L	2.4	FL OZ/A	3-4 leaf				
10	Nontreated						0	80	28	2838
LSD (P=.05)							4.4	0.9	1.8	1082.7
Standard Deviation							3.0	0.6	1.1	746.2
CV							3.61	0.75	3.52	11.51
Replicate F							3.809	1.891	1.777	5.824
Treatment F							384.702	5.053	2.553	19.416
Treatment Prob(F)							0.0001	0.0005	0.0432	0.0001

Rice Tolerance to Grasp Herbicide

Experiment number ..... : 05-MP-02

Site and design ..... :
- **Location/Cooperator** ..... : Morehouse Parish / Zaunbrecher Farm (Roland Crymes cooperating)
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** ..... : 4
- **Plot size** ..... : 7 x 20 ft
- **Row width/rows per plot** ..... : 7 in / 12

Soil type ..... : Hebert silty clay
- **% organic matter** ..... : 3.41
- **pH** ..... : 6.3
- **Extractable nutrients** ..... : P-77; K-302; Na-181; Ca-3210; Mg-972; Zn-4.1; Fe-139 ppm

Crop/Variety ..... : Rice / Multiple
- **Planting method/date** ..... : Drill seeded / April 28
- **Seeding rate/depth** ..... : Hybrids, 30 lb/A; Varieties, 40 seed/ft^2 / 0.5 in
- **Emergence date** ..... : May 14, 15
- **Harvest date** ..... : September 13

Fertilization ..... : 360 lb/A 46-0-0 preflood, June 8

Water management ..... :
- **Flush** ..... : May 6, 13, 23
- **Flood** ..... : June 15
- **Drain** ..... : August 30

Pest management ..... :
- **Herbicides** ..... : 13 oz/A Clincher + 1 qt/A COC, May 26; 1.6 oz/A Londax, June 20; 15 oz/A Clincher + 1 qt/A COC, June 20
- **Insecticides** ..... : 4 oz/A Karate, June 20 and August 5
- **Fungicides** ..... : 12 oz/A Quadris, July 30

LSU AgCenter
Rice Research Station
Rice Tolerance to Grasp Herbicide

Trial ID: 05-MP-02
Location: Morehouse Parish

Crop Name							Rice	Rice	Rice	Rice	Rice
Rating Date								13-Sep-2005	13-Sep-2005	13-Sep-2005	13-Sep-2005
Rating Data Type							50% Head	Height	Ldg-Rate	Ldg-Type	Yield
Rating Unit							days	inches	%	1-5	lb/A
Crop Stage							Main	Main	Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
1	Cocodrie						79	35			8327
1	Grasp	2	SL	0	OZ/A	2-3 leaf					
1	Agridex		L	0	% V/V	2-3 leaf					
2	Cocodrie						80	34	40	4	8267
2	Grasp	2	SL	3.96	OZ/A	2-3 leaf					
2	Agridex		L	2.5	% V/V	2-3 leaf					
3	Cheneire						83	33			8287
3	Grasp	2	SL	0	OZ/A	2-3 leaf					
3	Agridex		L	0	% V/V	2-3 leaf					
4	Cheneire						83	32			8177
4	Grasp	2	SL	3.96	OZ/A	2-3 leaf					
4	Agridex		L	2.5	% V/V	2-3 leaf					
5	Trenasse						75	36	15	2	9815
5	Grasp	2	SL	0	OZ/A	2-3 leaf					
5	Agridex		L	0	% V/V	2-3 leaf					
6	Trenasse						75	37	25	3	9345
6	Grasp	2	SL	3.96	OZ/A	2-3 leaf					
6	Agridex		L	2.5	% V/V	2-3 leaf					
7	Bengal						79	34			9277
7	Grasp	2	SL	0	OZ/A	2-3 leaf					
7	Agridex		L	0	% V/V	2-3 leaf					
8	Bengal						81	34			9462
8	Grasp	2	SL	3.96	OZ/A	2-3 leaf					
8	Agridex		L	2.5	% V/V	2-3 leaf					
9	Jupiter						81	33			9246
9	Grasp	2	SL	0	OZ/A	2-3 leaf					
9	Agridex		L	0	% V/V	2-3 leaf					
10	Jupiter						81	33			8823
10	Grasp	2	SL	3.96	OZ/A	2-3 leaf					
10	Agridex		L	2.5	% V/V	2-3 leaf					
11	CL161						85	36			7822
11	Grasp	2	SL	0	OZ/A	2-3 leaf					
11	Agridex		L	0	% V/V	2-3 leaf					
12	CL161						85	36			7719
12	Grasp	2	SL	3.96	OZ/A	2-3 leaf					
12	Agridex		L	2.5	% V/V	2-3 leaf					

LSU AgCenter
Rice Research Station
Rice Tolerance to Grasp Herbicide

Trial ID: 05-MP-02
Location: Morehouse Parish

Crop Name							Rice	Rice	Rice	Rice	Rice
Rating Date								13-Sep-2005	13-Sep-2005	13-Sep-2005	13-Sep-2005
Rating Data Type							50% Head	Height	Ldg-Rate	Ldg-Type	Yield
Rating Unit							days	inches	%	1-5	lb/A
Crop Stage							Main	Main	Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
13	CL131						80	30			8040
13	Grasp	2	SL	0	OZ/A	2-3 leaf					
13	Agridex		L	0	% V/V	2-3 leaf					
14	CL131						80	31			7732
14	Grasp	2	SL	3.96	OZ/A	2-3 leaf					
14	Agridex		L	2.5	% V/V	2-3 leaf					
15	Cybonnet						83	35			7515
15	Grasp	2	SL	0	OZ/A	2-3 leaf					
15	Agridex		L	0	% V/V	2-3 leaf					
16	Cybonnet						83	34			7250
16	Grasp	2	SL	3.96	OZ/A	2-3 leaf					
16	Agridex		L	2.5	% V/V	2-3 leaf					
17	Pirogue						78	33			8327
17	Grasp	2	SL	0	OZ/A	2-3 leaf					
17	Agridex		L	0	% V/V	2-3 leaf					
18	Pirogue						80	33			7907
18	Grasp	2	SL	3.96	OZ/A	2-3 leaf					
18	Agridex		L	2.5	% V/V	2-3 leaf					
19	XP723						78	42			11070
19	Grasp	2	SL	0	OZ/A	2-3 leaf					
19	Agridex		L	0	% V/V	2-3 leaf					
20	XP723						79	42			11242
20	Grasp	2	SL	3.96	OZ/A	2-3 leaf					
20	Agridex		L	2.5	% V/V	2-3 leaf					
LSD (P=.05)							1.1	1.3	.	.	618.2
Standard Deviation							0.8	0.9	.	.	437.1
CV							0.97	2.65	.	.	5.03
Replicate F							8.113	10.769			9.978
Replicate Prob(F)							0.0001	0.0001			0.0001
Treatment F							49.863	47.637			25.459
Treatment Prob(F)							0.0001	0.0001			0.0001

Influence of Proact on Rice Growth and Yield

Experiment number ..... : 05-CS-21

Site and design ..... :
- **Location/Cooperator** ..... : Rice Research Station (South Unit)
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** ..... : 4
- **Plot size** ..... : 7 x 20 ft
- **Row width/rows per plot** ..... : 7 in / 12

Soil type ..... : Crowley silt loam
- **% organic matter** ..... : 1.63
- **pH** ..... : 6.8
- **Extractable nutrients** ..... : P-46; K-148; Na-174; Ca-1509; Mg-401; Zn-3.9; Fe-67 ppm

Crop/Variety ..... : Rice / Cocodrie
- **Planting method/date** ..... : Drill seeded / April 4
- **Seeding rate/depth** ..... : 75 lb/A / 1 in
- **Emergence date** ..... : April 25
- **Harvest date** ..... : August 26

Fertilization ..... : 300 lb/A 0-24-24, September 20, 2004; 360 lb/A 46-0-0 preflood, May 23

Water management ..... :
- **Flush** ..... : April 7, 19, 28, May 5, 11
- **Flood** ..... : May 24
- **Drain** ..... : August 17

Pest management ..... :
- **Herbicides** ..... : 4 qt/A Stam + 0.75 oz/A Permit, May 4; 1.5 pt/A Basagran + 1qt/A COC, May 16; 15 oz/A Clincher + 1 qt/A COC, June 1 and 29
- **Insecticides** ..... : 1oz/A Icon, April 4
- **Fungicides** ..... : None

Treatment Application

Application Description: 05-CS-21

	A	B
Date ..... :	May 23	June 10
Time of day..... :	2:30 pm	7:00 am
Application method ..... :	Broadcast	Broadcast
Application timing ..... :	4 leaf	PI
Placement ..... :	Foliar	Foliar
Air temperature ..... :	93	72
Relative humidity (%)..... :	60	80
Wind (mph/direction)..... :	6 SW	3 SE
Dew presence (Y/N) ..... :	N	Y
Soil temperature ..... :	85	NA
Soil moisture..... :	Dry	Flood
Cloud cover (%) ..... :	50	15
Applied by ..... :	JB, RR	JB

Application Equipment:

Equipment..... :	CO_2 backpack	CO_2 backpack
Operating pressure..... :	32 psi	26 psi
Nozzle type/size ..... :	Airmix 02	Airmix 02
Nozzle spacing/no...... :	20 in / 5	20 in / 5
Boom height ..... :	18 in	18 in
Ground speed (mph) ..... :	3	1.8
Incorporation & depth ..... :	NA	NA

Crop Stage at Application:

Height ..... :	6-8 in	15 in
No. leaves/tillers ..... :	4 leaf	PI

LSU AgCenter
Rice Research Station
Influence of Proact on Rice Growth and Yield

Trial ID: 05-CS-21
Location: RRS-South Unit

Crop Name								Rice	Rice	Rice
Rating Date									23-Aug-2005	26-Aug-2005
Rating Data Type							Density	50% Head	Height	Yield
Rating Unit							pl/10 ft	days	inches	lb/A
Crop Stage							Main	Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage				
1	Nontreated						52	85	37	9083
2	Proact	1	WDG	0.5	OZ/A	4-lf rice	53	85	37	9194
3	Proact	1	WDG	1.0	OZ/A	4-lf rice	52	85	37	9007
4	Proact	1	WDG	0.5	OZ/A	PI	52	85	38	9198
5	Proact	1	WDG	1.0	OZ/A	PI	53	85	37	9074
LSD (P=.05)							1.5	0.6	0.8	406.7
Standard Deviation							1.4	0.6	0.8	397.2
CV							2.73	0.67	2.15	4.36
Replicate F							0.561	7.722	1.222	1.850
Replicate Prob(F)							0.7811	0.0001	0.3238	0.1166
Treatment F							1.120	0.778	1.400	0.347
Treatment Prob(F)							0.3672	0.5490	0.2596	0.8441

Sodium Chlorate as Harvest Desiccant for Rice

Experiment number ..... : 05-CM-29

Site and design ..... :
- **Location/Cooperator** ..... : Rice Research Station
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** ..... : 4
- **Plot size** ..... : 7 x 20 ft
- **Row width/rows per plot** ..... : 7 in / 12

Soil type ..... : Crowley silt loam
- **% organic matter** ..... : 1.51
- **pH** ..... : 6.8
- **Extractable nutrients** ..... : P-52; K-129; Na-135; Ca-1358; Mg-270; Zn-4.0; Fe-64 ppm

Crop/Variety ..... : Rice / Cocodrie
- **Planting method/date** ..... : Drill seeded / March 29
- **Seeding rate/depth** ..... : 33 seed/ft^2 / 1 in
- **Emergence date** ..... : April 8
- **Harvest date** ..... : August 11

Fertilization ..... : 275 lb/A 0-24-24, March 29; 360 lb/A 46-0-0 preflood, May 13

Water management ..... :
- **Flush** ..... : April 8, 18, 28, May 6
- **Flood** ..... : May 16; ratoon flood, August 15
- **Drain** ..... : July 29; ratoon drain, October 20

Pest management ..... :
- **Herbicides** ..... : 0.75 oz/A Permit + 4 qt/A Stam, April 21; 15 oz/A Clincher + 1 qt/A COC, April 27; 15 oz/A Clincher + 1 oz/A Londax + 1 qt/A COC, May 13; 1 qt/A Basagran + 1 qt/A COC, June 1; 1 oz/A Permit + 1.3 oz/A Londax, June 14
- **Insecticides** ..... : 1 oz/A Icon, March 28; 2 oz/A Karate, May 25; 4 oz/A Mustang Max, July 15
- **Fungicides** ..... : None

Treatment Application

Application Description: 05-CM-29

	A	B
Date ..... :	August 4	August 8
Time of day..... :	7:30 am	7:30 am
Application method ..... :	Broadcast	Broadcast
Application timing ..... :	7 days PH	3 days PH
Placement ..... :	Foliar	Foliar
Air temperature ..... :	80	83
Relative humidity (%)..... :	81	85
Wind (mph/direction)..... :	1-2 E	0
Dew presence (Y/N) ..... :	Y	Y
Soil temperature ..... :	NA	NA
Soil moisture..... :	Wet	Wet
Cloud cover (%) ..... :	10	60
Applied by ..... :	JB, JL, RR	JB, RR

Application Equipment:

Equipment..... :	CO_2 backpack	CO_2 backpack
Operating pressure..... :	32 psi	32 psi
Nozzle type/size ..... :	Air mix 015	Air mix 015
Nozzle spacing/no...... :	20 in / 4	20 in / 4
Boom height ..... :	18 in	18 in
Ground speed (mph) ..... :	3	3
Incorporation & depth ..... :	NA	NA

Crop Stage at Application:

Height ..... :	NA	NA
No. leaves/tillers ..... :	NA	NA

LSU AgCenter
Rice Research Station
Sodium Chlorate as Harvest Desiccant for Rice

Trial ID: 05-CM-29
Location: Rice Research Station

Crop Name						Rice	Rice	Rice
Rating Date							1-Aug-2005	11-Aug-2005
Rating Data Type						50% Head	Height	Yield
Rating Unit						days	inches	lb/A
Crop Stage						Main	Main	Main
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit			
1	Sodium chlorate	7.5	L	0	LB AI/A	90	34	6687
1	7 days preharvest							
2	Sodium chlorate	7.5	L	0	LB AI/A	90	34	7172
2	3 days preharvest							
3	Sodium chlorate	7.5	L	2	LB AI/A	90	35	6816
3	7 days preharvest							
4	Sodium chlorate	7.5	L	2	LB AI/A	90	35	7170
4	3 days preharvest							
5	Sodium chlorate	7.5	L	4	LB AI/A	90	35	6960
5	7 days preharvest							
6	Sodium chlorate	7.5	L	4	LB AI/A	90	35	7479
6	3 days preharvest							
7	Sodium chlorate	7.5	L	6	LB AI/A	90	34	7318
7	7 days preharvest							
8	Sodium chlorate	7.5	L	6	LB AI/A	90	34	7124
8	3 days preharvest							
LSD (P=.05)						0.9	1.9	413.0
Standard Deviation						0.6	1.1	280.8
CV						0.66	3.13	3.96
Replicate F						42.831	2.381	27.318
Replicate Prob(F)						0.0001	0.1288	0.0001
Treatment F						0.966	0.467	3.419
Treatment Prob(F)						0.4803	0.8426	0.0134

Hybrid Yield Comparison 1

Experiment number ..... : 05-CM-16

Site and design ..... :
- **Location/Cooperator** ..... : Rice Research Station
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** ..... : 4
- **Plot size** ..... : 7 x 20 ft
- **Row width/rows per plot** ..... : 7 in / 12

Soil type ..... : Crowley silt loam
- **% organic matter** ..... : 1.45
- **pH** ..... : 7.2
- **Extractable nutrients** ..... : P-34; K-137; Na-139; Ca-1403; Mg-282; Zn-3.6; Fe-46 ppm

Crop/Variety ..... : Rice / multiple
- **Planting method/date** ..... : Drill seeded / March 29
- **Seeding rate/depth** ..... : Hybrids, 30 lb/A; Varieties, 40 seed/ft^2 / 1 in
- **Emergence date** ..... : Multiple
- **Harvest date** ..... : August 12

Fertilization ..... : 275 lb/A 0-24-24, March 29; 200 lb/A 46-0-0 preflood, May 13; 130 lb/A 46-0-0 midseason (varieties), June 9; 130 lb/A 46-0-0 5% heading (hybrids), variable dates; 200 lb/A 46-0-0 postharvest, August 12

Water management ..... :
- **Flush** ..... : April 8, 18, 28, May 6
- **Flood** ..... : May 16; ratoon flood, August 15
- **Drain** ..... : July 29; ratoon drain, October 11

Pest management ..... :
- **Herbicides** ..... : 0.75 oz/A Permit + 4 qt/A Stam, April 21; 15 oz/A Clincher + 1 qt/A COC, April 27; 15 oz/A Clincher + 1 oz/A Londax + 1 qt/A COC, May 13; 1 qt/A Basagran + 1 qt/A COC, June 1; 1 oz/A Permit + 1.3 oz/A Londax, June 14
- **Insecticides** ..... : 1 oz/A Icon, March 28; 2 oz/A Karate, May 25; 4 oz/A Mustang Max, July 15
- **Fungicides** ..... : None

LSU AgCenter
Rice Research Station
Hybrid Yield Comparison 1

Trial ID: 05-CM-16
Location: Rice Research Station

Crop Name		Rice	Rice	Rice	Rice	Rice	Rice	Rice
Rating Date			1-Aug-2005	12-Aug-2005	24-Oct-2005			
Rating Data Type		50% Head	Height	Yield	Yield	Yield	Head Rice	Total Mill
Rating Unit		days	inches	lb/A	lb/A	lb/A	%	%
Crop Stage		Main	Main	Main	Ratoon	Total	Main	Main
Trt No.	Treatment Name							
1	CL XL8	84	39	9550	1224	10774	56	70
2	CL XP730	83	39	10243	1652	11895	56	71
3	XP723	82	36	9320	1676	10996	57	70
4	XP721	78	35	8833	1796	10629	54	69
5	XP728	82	37	9625	2182	11806	55	70
6	XP729	82	37	8544	2058	10602	52	69
7	XP732	82	38	10192	1722	11914	56	70
8	XP731	82	39	9848	1494	11342	55	70
9	XP710	86	39	8720	1380	10100	45	68
10	XP716	87	39	8963	2066	11029	65	71
11	Cocodrie	83	32	8188			58	71
12	Cheniere	86	32	7601			58	71
13	Bengal	85	32	7497			66	73
14	Jupiter	88	31	7731			66	71
15	CL161	88	36	8152			61	70
16	CL131	84	29	7806			63	70
LSD (P=.05)		2.0	1.7	1705.8	374.0	2208.2	5.7	0.7
Standard Deviation		1.4	1.0	1193.6	257.8	1521.9	2.7	0.3
CV		1.65	2.9	13.56	14.94	13.7	4.64	0.45
Replicate F		0.205	2.121	4.922	5.826	4.355	0.658	17.500
Replicate Prob(F)		0.8921	0.1376	0.0048	0.0033	0.0126	0.4299	0.0008
Treatment F		15.656	31.751	2.394	5.825	0.661	8.692	19.295
Treatment Prob(F)		0.0001	0.0001	0.0122	0.0002	0.7362	0.0001	0.0001

Hybrid Yield Comparison 2

Experiment number ..... : 05-VP-08

Site and design ..... :
- **Location/Cooperator** ..... : Vermilion Parish / Lounsberry Farm
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** ..... : 4
- **Plot size** ..... : 7 x 20 ft
- **Row width/rows per plot** ..... : 7 in / 12

Soil type ..... : Crowley silt loam
- **% organic matter** ..... : 1.72
- **pH** ..... : 5.1
- **Extractable nutrients** ..... : P-104; K-155; Na-68; Ca-744; Mg-143; Zn-2.3; Fe-186 ppm

Crop/Variety ..... : Rice / multiple
- **Planting method/date** ..... : Drill seeded / March 30
- **Seeding rate/depth** ..... : Hybrids, 30 lb/A; Varieties, 40 seed/ft^2 / 1 in
- **Emergence date** ..... : Hybrids, April 7; Varieties, April 6
- **Harvest date** ..... : August 8

Fertilization ..... : 200 lb/A 0-26-26, March 14; 200 lb/A 46-0-0 preflood, May 3; 130 lb/A 46-0-0 midseason (varieties), May 31; 130 lb/A 46-0-0 5% heading (hybrids), variable dates

Water management ..... :
- **Flush** ..... : April 14, 24
- **Flood** ..... : May 6
- **Drain** ..... : July 25

Pest management ..... :
- **Herbicides** ..... : 0.5 oz/A Permit + 3 qt/A Duet, April 21; 3 qt/A Arrosolo + 1 oz/A Permit, May 4
- **Insecticides** ..... : 1.5 pt/A Malathion, June 24
- **Fungicides** ..... : 12 oz/A Quadris, June 13 and 29

LSU AgCenter
Rice Research Station
Hybrid Yield Comparison 2

Trial ID: 05-VP-08
Location: Vermilion Parish

Crop Name			Rice	Rice	Rice	Rice	Rice	Rice	Rice
Rating Date				1-Aug-2005	1-Aug-2005	1-Aug-2005	1-Aug-2005		
Rating Data Type			50% Head	Height	Ldg-Rate	Ldg-Type	Main Yield	Head Rice	Total Mill
Rating Unit			days	inches	%	1-5	lb/A	%	%
Crop Stage			Main	Main	Main	Main	Main	Main	Main
Trt No.	Treatment Name	Rate Unit							
1	CL XL8		80	40	.	.	10297	55	70
2	CL XP730		80	42	.	.	12408	57	70
3	XP723		79	39	.	.	12619	60	71
4	XP721		75	37	40	2	11754	54	70
5	XP728		79	40	.	.	12955	54	70
6	XP729		80	40	.	.	12712	55	70
7	XP732		79	41	.	.	13490	56	70
8	XP731		78	42	.	.	12961	54	69
9	XP710		82	41	.	.	11948	43	66
10	XP716		88	40	.	.	11443	60	68
11	Cocodrie		79	37	.	.	9407	53	67
12	Cheniere		81	33	.	.	8546	54	69
13	Bengal		85	34	.	.	8522	63	70
14	Jupiter		87	34	.	.	11362	62	69
15	CL161		82	37	.	.	8227	51	65
16	CL131		82	29	.	.	7781	50	67
LSD (P=.05)			0.9	5.0	.	.	752.0	5.1	2.6
Standard Deviation			0.6	3.0	.	.	526.2	2.4	1.2
CV			0.78	7.85	.	.	4.77	4.37	1.76
Replicate F			3.590	0.254			0.833	0.168	0.102
Replicate Prob(F)			0.0207	0.7772			0.4830	0.6876	0.7533
Treatment F			110.097	4.815			54.344	8.255	4.628
Treatment Prob(F)			0.0001	0.0001			0.0001	0.0001	0.0026

Hybrid Yield Comparison 3

Experiment number ..... : 05-MP-01

Site and design ..... :
- **Location/Cooperator** ..... : Morehouse Parish / Zaunbrecher Farm (Roland Crymes cooperating)
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** ..... : 4
- **Plot size** ..... : 7 x 20 ft
- **Row width/rows per plot** ..... : 7 in / 12

Soil type ..... : Hebert silty clay
- **% organic matter** ..... : 3.41
- **pH** ..... : 6.3
- **Extractable nutrients** ..... : P-77; K-302; Na-181; Ca-3210; Mg-972; Zn-4.1; Fe-139 ppm

Crop/Variety ..... : Rice / multiple
- **Planting method/date** ..... : Drill seeded / April 28
- **Seeding rate/depth** ..... : Hybrids, 30 lb/A; Varieties, 40 seed/ft^2 / 0.5 in
- **Emergence date** ..... : May 15
- **Harvest date** ..... : September 12

Fertilization ..... : 360 lb/A 46-0-0, June 8

Water management ..... :
- **Flush** ..... : May 6, 13, 23
- **Flood** ..... : June 15
- **Drain** ..... : August 30

Pest management ..... :
- **Herbicides** ..... : 13 oz/A Clincher + 1 qt/A COC, May 26; 1.6 oz/A Londax, June 20; 15 oz/A Clincher + 1 qt/A COC, June 20
- **Insecticides** ..... : 4 oz/A Karate, June 20 and August 5
- **Fungicides** ..... : 12 oz/A Quadris, July 30

LSU AgCenter
Rice Research Station
Hybrid Yield Comparison 3

Trial ID: 05-MP-01
Location: Morehouse Parish

Crop Name			Rice	Rice	Rice	Rice	Rice	Rice	Rice
Rating Date				13-Sep-2005	13-Sep-2005	13-Sep-2005	14-Sep-2005		
Rating Data Type			50% Head	Height	Ldg-Rate	Ldg-Type	Yield	Head Rice	Total Mill
Rating Unit			days	inches	%	1-5	lb/A	%	%
Crop Stage			Main	Main	Main	Main	Main	Main	Main
Trt No.	Treatment Name	Rate Unit							
1	CL XL8		78	41			9436	53	69
2	CL XP730		78	44	30	2	11927	58	71
3	XP723		78	41			11595	59	71
4	XP721		74	40	63	2	10776	55	69
5	XP728		76	41	70	3	11047	54	70
6	XP729		78	41	30	1	11475	56	70
7	XP732		78	41	70	2	11959	56	70
8	XP731		78	43	55	1	11314	54	70
9	XP710		84	41	50	2	11322	54	70
10	XP716		80	42	40	1	10899	63	70
11	Cocodrie		79	34	30	2	8950	61	70
12	Cheniere		81	32			8677	64	72
13	Bengal		78	33			10005	68	73
14	Jupiter		80	32			9864	66	71
15	CL161		83	36			7917	63	70
16	CL131		78	29			8024	65	72
LSD (P=.05)			1.2	1.8	40.0	2.3	924.5	3.3	1.1
Standard Deviation			0.8	1.3	17.8	1.0	646.9	1.5	0.5
CV			1.04	3.36	36.5	57.89	6.27	2.59	0.75
Replicate F			1.263	4.177	0.178	0.179	0.192	6.809	10.812
Replicate Prob(F)			0.2985	0.0108	0.9051	0.9046	0.9012	0.0197	0.0050
Treatment F			35.871	56.345	3.619	1.369	17.846	20.407	6.646
Treatment Prob(F)			0.0001	0.0001	0.1590	0.4378	0.0001	0.0001	0.0004

Ratoon Response of Rice Hybrids to Main-Crop Stubble Manipulation

Experiment number ..... : 05-CM-22

Site and design ..... :
- **Location/Cooperator** ..... : Rice Research Station
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** ..... : 4
- **Plot size** ..... : 7 x 50 ft
- **Row width/rows per plot** ..... : 7 in / 12

Soil type ..... : Crowley silt loam
- **% organic matter** ..... : 1.53
- **pH** ..... : 7.0
- **Extractable nutrients** ..... : P-52; K-111; Na-120; Ca-1216; Mg-234; Zn-4.3; Fe-69 ppm

Crop/Variety ..... : Rice / XP723, XP721
- **Planting method/date** ..... : Drill seeded / March 29
- **Seeding rate/depth** ..... : 30 lb/A / 1 in
- **Emergence date** ..... : April 11
- **Harvest date** ..... : August 10

Fertilization ..... : 275 lb/A 0-24-24, March 29; 360 lb/A 46-0-0 preflood, May 13; 200 lb/A 46-0-0 postharvest, August 15

Water management ..... :
- **Flush** ..... : April 8, 18, 28, May 6
- **Flood** ..... : May 16; ratoon flood, August 15
- **Drain** ..... : July 29; ratoon drain, October 17

Pest management ..... :
- **Herbicides** ..... : 0.75 oz/A Permit + 4 qt/A Stam, April 21; 15 oz/A Clincher + 1 qt/A COC, April 27; 15 oz/A Clincher + 1 oz/A Londax + 1 qt/A COC, May 13; 1 qt/A Basagran + 1 qt/A COC, June 1; 1 oz/A Permit + 1.3 oz/A Londax, June 14
- **Insecticides** ..... : 1 oz/A Icon, March 28; 2 oz/A Karate, May 25; 4 oz/A Mustang Max, July 15
- **Fungicides** ..... : None

LSU AgCenter
Rice Research Station
Ratoon Response of Rice Hybrids to Main-Crop Stubble Manipulation

Trial ID: 05-CM-22
Location: Rice Research Station

Crop Name		Rice	Rice	Rice	Rice
Rating Date		2-Aug-2005	10-Aug-2005	10-Aug-2005	
Rating Data Type		Height	Ldg-Rate	Ldg-Type	Yield
Rating Unit		inches	%	1-5	lb/A
Crop Stage		Main	Main	Main	Ratoon
Trt No.	Treatment Name				
1	Standard cutting height	39	0	0	1138
1	XP723				
2	Standard cutting height	38	34	4	2029
2	XP721				
3	12-inch cutting height	39	0	0	1108
3	XP723				
4	12-inch cutting height	38	38	4	1966
4	XP721				
5	Rolled	39	0	0	702
5	XP723				
6	Rolled	37	10	3	2144
6	XP721				
7	Flail-mowed	39	0	0	1224
7	XP723				
8	Flail-mowed	37	31	4	2416
8	XP721				
LSD (P=.05)		2.0	12.9	1.2	650.7
Standard Deviation		1.1	8.7	0.8	442.4
CV		2.93	62.13	46.43	27.81
Replicate F		0.925	1.788	0.294	2.428
Replicate Prob(F)		0.4196	0.1804	0.8292	0.0939
Treatment F		2.415	15.269	22.059	7.830
Treatment Prob(F)		0.0760	0.0001	0.0001	0.0001

SOYBEAN RESEARCH

J.A. Bond, J.P. Leonards, and R.P. Regan

The following section of this report documents research conducted in the area of soybean weed management. Soybean weed management experiments were conducted at the Rice Research Station South Unit near Crowley. These experiments were conducted in cooperation with Dr. James L. Griffin in the Department of Agronomy and Environmental Management, LSU AgCenter.

A weed interference experiment was begun in 2005 to determine the optimum application timing for glyphosate in a Roundup Ready soybean production system. This research documented that glyphosate must be applied prior to 3 weeks after soybean emergence to avoid yield loss.

A glyphosate application timing experiment was conducted to determine if applications of glyphosate during soybean reproductive growth stages reduced soybean yield. Late applications of glyphosate after soybean is flowering did not negatively affect yield or cause a delay in harvest due to "green stems."

The efficacy of Valor applied preemergence as a component of a Roundup Ready soybean production system was also examined in 2005. Valor applied at 2 oz/A was safe on soybean, and weed control was improved when Valor was followed by single postemergence glyphosate applications compared with multiple glyphosate applications.

Herbicide combinations in a Roundup Ready soybean production system were evaluated for crop safety and suppression of late-emerging grass weeds, which can affect yield and crop quality. Application of Sequence (a premix of glyphosate and Dual Magnum) at 3.5 pt/A was effective in preventing late-season emergence of grasses. Also evaluated were combinations of glyphosate and either Prowl EC or Prowl H_2O. These combinations were as effective as Sequence. The EC formulation of Prowl caused some crop injury but soybean recovery was rapid.

Common Abbreviations Used in Soybean Research at the Rice Research Station

A	Acre
ft	Feet
gal/A	Gallons product per acre
in	Inches
lb/A	Pounds product per acre
NA	Information not available/applicable
oz/A	Ounces product per acre
PRE	Preemergence application prior to crop emergence
POST	Postemergence application after crop emergence
POSTAN	Postemergence application as needed after crop emergence
POST2	Second application of sequential postemergence treatment
RRS	Rice Research Station, Crowley, LA
WAE	Weeks after emergence

Crop protection chemicals and formulations used in soybean research at the Rice Research Station in 2005.

Trade name	Common name	Formulation	Company
Herbicides			
Prowl EC	Pendimethalin	3.3 EC	BASF
Prowl H_2O	Pendimethalin	3.8 S	BASF
Roundup Original Max	Glyphosate	5.5 L	Monsanto
Sequence	Glyphosate + S-metoloachlor	2.25 + 3 L	Syngenta
Valor	Flumioxazin	51% WDG	Valent
Insecticides			
Karate Z	Cyhalothrin	2.08 lb	Syngenta
Orthene	Acephate	75% WSP	Valent
Fungicides			
Quadris	Azoxystrobin	2.08 lb	Syngenta
Topsin M	Thiophanate-methyl	75% WP	Cerexagri

Weed Management Research

Experiment number ..... : 05-CS-23 to 05-CS-26

Site and design ..... :
- **Location/Cooperator** ..... : Rice Research Station (South Unit)
- **Tillage type** ..... : Conventional
- **Experimental design** ..... : Randomized complete block
- **Number of reps** ..... : 4
- **Plot size** ..... : 7 x 25 ft
- **Row width/rows per plot** ..... : 14 in / 6

Soil type ..... : Crowley silt loam
- **% organic matter** ..... : NA
- **pH** ..... : NA
- **Extractable nutrients** ..... : NA

Crop/Variety ..... : Soybean / DP 5806
- **Planting method/date** ..... : Drill seeded / June 15
- **Seeding rate/depth** ..... : 3 seed/ft^2 / 1 in
- **Emergence date** ..... : June 22
- **Harvest date** ..... : October 19

Fertilization ..... : 300 lb/A 0-24-24, June 3

LSU AgCenter
Rice Research Station
Weed Interference in Soybean

Trial ID: 05-CS-23
Location: RRS-South Unit

Pest Code									
Pest Name									
Crop Name							Soybean	Soybean	Soybean
Rating Date							27-Jul-2005	17-Aug-2005	7-Sep-2005
Rating Data Type							Injury	Injury	Injury
Rating Unit							%	%	%
Trt-Eval Interval							5 WAE	8 WAE	11 WAE
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	Nontreated						0	0	0
2	Weed-free 0 WAE						0	0	0
2	Valor	51	WP	2.5	OZ/A	PRE			
2	Roundup Original Max	5.5	L	44	OZ/A	POSTAN			
3	1 WAE						0	0	0
3	Roundup Original Max	5.5	L	44	OZ/A	1 WAE			
3	Roundup Original Max	5.5	L	44	OZ/A	POSTAN			
4	2 WAE						0	0	0
4	Roundup Original Max	5.5	L	44	OZ/A	2 WAE			
4	Roundup Original Max	5.5	L	44	OZ/A	POSTAN			
5	3 WAE						1	0	0
5	Roundup Original Max	5.5	L	44	OZ/A	3 WAE			
5	Roundup Original Max	5.5	L	44	OZ/A	POSTAN			
6	4 WAE						1	0	0
6	Roundup Original Max	5.5	L	44	OZ/A	4 WAE			
6	Roundup Original Max	5.5	L	44	OZ/A	POSTAN			
7	5 WAE							0	0
7	Roundup Original Max	5.5	L	44	OZ/A	5 WAE			
7	Roundup Original Max	5.5	L	44	OZ/A	POSTAN			
8	6 WAE							1	0
8	Roundup Original Max	5.5	L	44	OZ/A	6 WAE			
8	Roundup Original Max	5.5	L	44	OZ/A	POSTAN			
9	7 WAE							1	0
9	Roundup Original Max	5.5	L	44	OZ/A	7 WAE			
9	Roundup Original Max	5.5	L	44	OZ/A	POSTAN			
10	8 WAE								0
10	Roundup Original Max	5.5	L	44	OZ/A	8 WAE			
10	Roundup Original Max	5.5	L	44	OZ/A	POSTAN			
LSD (P=.05)							1.0	0.7	0.0
Standard Deviation							0.7	0.5	0.0
CV							263.31	294.39	0.0
Replicate F							0.385	1.692	0.000
Replicate Prob(F)							0.7656	0.1953	1.0000
Treatment F							1.615	2.077	0.000
Treatment Prob(F)							0.2161	0.0795	1.0000

LSU AgCenter
Rice Research Station
Weed Interference in Soybean

Trial ID: 05-CS-23
Location: RRS-South Unit

Pest Code							ECHCG	ECHCG	ECHCG
Pest Name							Barnyardgrass	Barnyardgrass	Barnyardgrass
Crop Name							Soybean	Soybean	Soybean
Rating Date							27-Jul-2005	17-Aug-2005	7-Sep-2005
Rating Data Type							Control	Control	Control
Rating Unit							%	%	%
Trt-Eval Interval							5 WAE	8 WAE	11 WAE
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	Nontreated						0	0	0
2	Weed-free 0 WAE						95	96	97
2	Valor	51	WP	2.5	OZ/A	PRE			
2	Roundup Original Max	5.5	L	44	OZ/A	POSTAN			
3	1 WAE						95	96	97
3	Roundup Original Max	5.5	L	44	OZ/A	1 WAE			
3	Roundup Original Max	5.5	L	44	OZ/A	POSTAN			
4	2 WAE						99	99	98
4	Roundup Original Max	5.5	L	44	OZ/A	2 WAE			
4	Roundup Original Max	5.5	L	44	OZ/A	POSTAN			
5	3 WAE						97	99	98
5	Roundup Original Max	5.5	L	44	OZ/A	3 WAE			
5	Roundup Original Max	5.5	L	44	OZ/A	POSTAN			
6	4 WAE						74	99	98
6	Roundup Original Max	5.5	L	44	OZ/A	4 WAE			
6	Roundup Original Max	5.5	L	44	OZ/A	POSTAN			
7	5 WAE							96	95
7	Roundup Original Max	5.5	L	44	OZ/A	5 WAE			
7	Roundup Original Max	5.5	L	44	OZ/A	POSTAN			
8	6 WAE							89	97
8	Roundup Original Max	5.5	L	44	OZ/A	6 WAE			
8	Roundup Original Max	5.5	L	44	OZ/A	POSTAN			
9	7 WAE							66	97
9	Roundup Original Max	5.5	L	44	OZ/A	7 WAE			
9	Roundup Original Max	5.5	L	44	OZ/A	POSTAN			
10	8 WAE								97
10	Roundup Original Max	5.5	L	44	OZ/A	8 WAE			
10	Roundup Original Max	5.5	L	44	OZ/A	POSTAN			
LSD (P=.05)							5.0	3.1	3.3
Standard Deviation							3.3	2.1	2.2
CV							4.3	2.61	2.57
Replicate F							0.394	0.914	0.309
Replicate Prob(F)							0.7588	0.4488	0.8185
Treatment F							550.445	917.289	749.433
Treatment Prob(F)							0.0001	0.0001	0.0001

LSU AgCenter
Rice Research Station
Weed Interference in Soybean

Trial ID: 05-CS-23
Location: RRS-South Unit

Pest Code							BRAPP	BRAPP	BRAPP
Pest Name							Broadleaf signalgrass	Broadleaf signalgrass	Broadleaf signalgrass
Crop Name							Soybean	Soybean	Soybean
Rating Date							6-Jul-2005	27-Jul-2005	17-Aug-2005
Rating Data Type							Control	Control	Control
Rating Unit							%	%	%
Trt-Eval Interval							2 WAE	5 WAE	8 WAE
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	Nontreated						25	0	0
2	Weed-free 0 WAE						99	97	98
2	Valor	51	WP	2.5	OZ/A	PRE			
2	Roundup Original Max	5.5	L	44	OZ/A	POSTAN			
3	1 WAE						99	96	96
3	Roundup Original Max	5.5	L	44	OZ/A	1 WAE			
3	Roundup Original Max	5.5	L	44	OZ/A	POSTAN			
4	2 WAE							99	99
4	Roundup Original Max	5.5	L	44	OZ/A	2 WAE			
4	Roundup Original Max	5.5	L	44	OZ/A	POSTAN			
5	3 WAE							98	99
5	Roundup Original Max	5.5	L	44	OZ/A	3 WAE			
5	Roundup Original Max	5.5	L	44	OZ/A	POSTAN			
6	4 WAE							60	99
6	Roundup Original Max	5.5	L	44	OZ/A	4 WAE			
6	Roundup Original Max	5.5	L	44	OZ/A	POSTAN			
7	5 WAE								99
7	Roundup Original Max	5.5	L	44	OZ/A	5 WAE			
7	Roundup Original Max	5.5	L	44	OZ/A	POSTAN			
8	6 WAE								85
8	Roundup Original Max	5.5	L	44	OZ/A	6 WAE			
8	Roundup Original Max	5.5	L	44	OZ/A	POSTAN			
9	7 WAE								60
9	Roundup Original Max	5.5	L	44	OZ/A	7 WAE			
9	Roundup Original Max	5.5	L	44	OZ/A	POSTAN			
10	8 WAE								
10	Roundup Original Max	5.5	L	44	OZ/A	8 WAE			
10	Roundup Original Max	5.5	L	44	OZ/A	POSTAN			
LSD (P=.05)							49.4	4.8	4.4
Standard Deviation							28.6	3.2	3.0
CV							38.49	4.29	3.67
Replicate F							1.000	0.790	0.296
Replicate Prob(F)							0.4547	0.5180	0.8277
Treatment F							9.000	608.406	490.222
Treatment Prob(F)							0.0156	0.0001	0.0001

LSU AgCenter
Rice Research Station
Weed Interference in Soybean

Trial ID: 05-CS-23
Location: RRS-South Unit

Pest Code							BRAPP	CYPES	CYPES
Pest Name							Broadleaf signalgrass	Yellow nutsedge	Yellow nutsedge
Crop Name							Soybean	Soybean	Soybean
Rating Date							7-Sep-2005	6-Jul-2005	27-Jul-2005
Rating Data Type							Control	Control	Control
Rating Unit							%	%	%
Trt-Eval Interval							11 WAE	2 WAE	5 WAE
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	Nontreated						0	0	0
2	Weed-free 0 WAE						98	93	94
2	Valor	51	WP	2.5	OZ/A	PRE			
2	Roundup Original Max	5.5	L	44	OZ/A	POSTAN			
3	1 WAE						97	90	92
3	Roundup Original Max	5.5	L	44	OZ/A	1 WAE			
3	Roundup Original Max	5.5	L	44	OZ/A	POSTAN			
4	2 WAE						99		95
4	Roundup Original Max	5.5	L	44	OZ/A	2 WAE			
4	Roundup Original Max	5.5	L	44	OZ/A	POSTAN			
5	3 WAE						98		91
5	Roundup Original Max	5.5	L	44	OZ/A	3 WAE			
5	Roundup Original Max	5.5	L	44	OZ/A	POSTAN			
6	4 WAE						99		58
6	Roundup Original Max	5.5	L	44	OZ/A	4 WAE			
6	Roundup Original Max	5.5	L	44	OZ/A	POSTAN			
7	5 WAE						98		
7	Roundup Original Max	5.5	L	44	OZ/A	5 WAE			
7	Roundup Original Max	5.5	L	44	OZ/A	POSTAN			
8	6 WAE						99		
8	Roundup Original Max	5.5	L	44	OZ/A	6 WAE			
8	Roundup Original Max	5.5	L	44	OZ/A	POSTAN			
9	7 WAE						99		
9	Roundup Original Max	5.5	L	44	OZ/A	7 WAE			
9	Roundup Original Max	5.5	L	44	OZ/A	POSTAN			
10	8 WAE						98		
10	Roundup Original Max	5.5	L	44	OZ/A	8 WAE			
10	Roundup Original Max	5.5	L	44	OZ/A	POSTAN			
LSD (P=.05)							2.1	4.1	5.0
Standard Deviation							1.4	2.4	3.3
CV							1.63	3.87	4.62
Replicate F							1.286	2.500	1.207
Replicate Prob(F)							0.2993	0.1565	0.3412
Treatment F							1865.679	1999.500	524.799
Treatment Prob(F)							0.0001	0.0001	0.0001

LSU AgCenter
Rice Research Station
Weed Interference in Soybean

Trial ID: 05-CS-23
Location: RRS-South Unit

Pest Code							CYPES	CYPES	MEOCO	MEOCO
Pest Name							Yellow nutsedge	Yellow nutsedge	Redweed	Redweed
Crop Name							Soybean	Soybean	Soybean	Soybean
Rating Date							17-Aug-2005	7-Sep-2005	6-Jul-2005	27-Jul-2005
Rating Data Type							Control	Control	Control	Control
Rating Unit							%	%	%	%
Trt-Eval Interval							8 WAE	11 WAE	2 WAE	5 WAE
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage				
1	Nontreated						0	0	0	0
2	Weed-free 0 WAE						97	97	98	99
2	Valor	51	WP	2.5	OZ/A	PRE				
2	Roundup Original Max	5.5	L	44	OZ/A	POSTAN				
3	1 WAE						95	95	99	98
3	Roundup Original Max	5.5	L	44	OZ/A	1 WAE				
3	Roundup Original Max	5.5	L	44	OZ/A	POSTAN				
4	2 WAE						99	98		99
4	Roundup Original Max	5.5	L	44	OZ/A	2 WAE				
4	Roundup Original Max	5.5	L	44	OZ/A	POSTAN				
5	3 WAE						97	96		99
5	Roundup Original Max	5.5	L	44	OZ/A	3 WAE				
5	Roundup Original Max	5.5	L	44	OZ/A	POSTAN				
6	4 WAE						97	96		85
6	Roundup Original Max	5.5	L	44	OZ/A	4 WAE				
6	Roundup Original Max	5.5	L	44	OZ/A	POSTAN				
7	5 WAE						95	96		
7	Roundup Original Max	5.5	L	44	OZ/A	5 WAE				
7	Roundup Original Max	5.5	L	44	OZ/A	POSTAN				
8	6 WAE						85	97		
8	Roundup Original Max	5.5	L	44	OZ/A	6 WAE				
8	Roundup Original Max	5.5	L	44	OZ/A	POSTAN				
9	7 WAE						59	95		
9	Roundup Original Max	5.5	L	44	OZ/A	7 WAE				
9	Roundup Original Max	5.5	L	44	OZ/A	POSTAN				
10	8 WAE							96		
10	Roundup Original Max	5.5	L	44	OZ/A	8 WAE				
10	Roundup Original Max	5.5	L	44	OZ/A	POSTAN				
LSD (P=.05)							3.2	3.6	2.0	4.6
Standard Deviation							2.2	2.5	1.2	3.1
CV							2.73	2.83	1.76	3.84
Replicate F							1.801	1.142	1.000	0.718
Replicate Prob(F)							0.1739	0.3501	0.4547	0.5567
Treatment F							889.387	617.686	9703.001	663.417
Treatment Prob(F)							0.0001	0.0001	0.0001	0.0001

LSU AgCenter
Rice Research Station
Weed Interference in Soybean

Trial ID: 05-CS-23
Location: RRS-South Unit

Pest Code							MEOCO	MEOCO	
Pest Name							Redweed	Redweed	
Crop Name							Soybean	Soybean	Soybean
Rating Date							17-Aug-2005	7-Sep-2005	3-Nov-2005
Rating Data Type							Control	Control	Yield
Rating Unit							%	%	bu/A
Trt-Eval Interval							8 WAE	11 WAE	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	Nontreated						0	0	19
2	Weed-free 0 WAE						99	99	35
2	Valor	51	WP	2.5	OZ/A	PRE			
2	Roundup Original Max	5.5	L	44	OZ/A	POSTAN			
3	1 WAE						99	99	41
3	Roundup Original Max	5.5	L	44	OZ/A	1 WAE			
3	Roundup Original Max	5.5	L	44	OZ/A	POSTAN			
4	2 WAE						99	99	32
4	Roundup Original Max	5.5	L	44	OZ/A	2 WAE			
4	Roundup Original Max	5.5	L	44	OZ/A	POSTAN			
5	3 WAE						99	98	36
5	Roundup Original Max	5.5	L	44	OZ/A	3 WAE			
5	Roundup Original Max	5.5	L	44	OZ/A	POSTAN			
6	4 WAE						99	99	23
6	Roundup Original Max	5.5	L	44	OZ/A	4 WAE			
6	Roundup Original Max	5.5	L	44	OZ/A	POSTAN			
7	5 WAE						99	99	23
7	Roundup Original Max	5.5	L	44	OZ/A	5 WAE			
7	Roundup Original Max	5.5	L	44	OZ/A	POSTAN			
8	6 WAE						96	98	21
8	Roundup Original Max	5.5	L	44	OZ/A	6 WAE			
8	Roundup Original Max	5.5	L	44	OZ/A	POSTAN			
9	7 WAE						76	98	19
9	Roundup Original Max	5.5	L	44	OZ/A	7 WAE			
9	Roundup Original Max	5.5	L	44	OZ/A	POSTAN			
10	8 WAE							98	19
10	Roundup Original Max	5.5	L	44	OZ/A	8 WAE			
10	Roundup Original Max	5.5	L	44	OZ/A	POSTAN			
LSD (P=.05)							3.8	1.8	9.7
Standard Deviation							2.6	1.2	5.7
CV							3.03	1.4	21.02
Replicate F							0.702	1.385	0.788
Replicate Prob(F)							0.5600	0.2688	0.4706
Treatment F							646.496	2522.337	6.587
Treatment Prob(F)							0.0001	0.0001	0.0005

Treatment Application

Application Description: 05-CS-24

	A	B	C	D
Date ..... :	July 6	July 27	July 29	August 16
Time of day..... :	7:30 am	8:30 am	11:30 am	9:00 am
Application method ..... :	Broadcast	Broadcast	Broadcast	Broadcast
Application timing ..... :	2 WAE	5 WAE	R1	R3
Placement ..... :	Foliar	Foliar	Foliar	Foliar
Air temperature ..... :	79	84	90	87
Relative humidity (%)..... :	78	83	81	95
Wind (mph/direction)..... :	2-3 N	0	1-2 S	0
Dew presence (Y/N) ..... :	Y	Y	N	Y
Soil temperature ..... :	NA	NA	NA	NA
Soil moisture..... :	Adequate	Dry	Adequate	Adequate
Cloud cover (%) ..... :	10	10	30	20
Applied by ..... :	JB, RR	JB, RR	JB	JB

Application Equipment:

Equipment..... :	CO_2 backpack	CO_2 backpack	CO_2 backpack	CO_2 backpack
Operating pressure..... :	32 psi	32 psi	32 psi	32 psi
Nozzle type/size ..... :	Airmix 015	Airmix 015	Airmix 015	Airmix 015
Nozzle spacing/no...... :	20 in / 5	20 in / 5	20 in / 5	20 in / 5
Boom height ..... :	17 in	18 in	18 in	18 in
Ground speed (mph) ..... :	3	3	3	2
Incorporation & depth ..... :	NA	NA	NA	NA

Crop Stage at Application:

Height ..... :	6-8 in	30 in	36 in	48 in
No. leaves/tillers ..... :	V4	V6	R1	R3

LSU AgCenter
Rice Research Station
Delayed Applications of Glyphosate in Soybean

Trial ID: 05-CS-24
Location: RRS-South Unit

Pest Code									
Pest Name									
Crop Name							Soybean	Soybean	Soybean
Rating Date							20-Jul-2005	17-Aug-2005	7-Sep-2005
Rating Data Type							Injury	Injury	Injury
Rating Unit							%	%	%
Trt-Eval Interval							4 WAE	8 WAE	11 WAE
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	Nontreated						0	0	0
2	Roundup Original Max	5.5	L	17.5	OZ/A	2 WAE	0	0	0
3	Roundup Original Max	5.5	L	17.5	OZ/A	5 WAE	0	0	0
4	Roundup Original Max	5.5	L	17.5	OZ/A	2 WAE	0	0	0
4	Roundup Original Max	5.5	L	17.5	OZ/A	5 WAE			
5	Roundup Original Max	5.5	L	17.5	OZ/A	2 WAE	0	0	0
5	Roundup Original Max	5.5	L	17.5	OZ/A	R1			
6	Roundup Original Max	5.5	L	17.5	OZ/A	2 WAE	0	0	0
6	Roundup Original Max	5.5	L	17.5	OZ/A	R3			
7	Roundup Original Max	5.5	L	17.5	OZ/A	2 WAE	0	0	0
7	Roundup Original Max	5.5	L	17.5	OZ/A	5 WAE			
7	Roundup Original Max	5.5	L	17.5	OZ/A	R3			
8	Roundup Original Max	5.5	L	17.5	OZ/A	2 WAE	0	0	0
8	Roundup Original Max	5.5	L	17.5	OZ/A	R1			
8	Roundup Original Max	5.5	L	17.5	OZ/A	R3			
LSD (P=.05)							0.0	0.0	0.0
Standard Deviation							0.0	0.0	0.0
CV							0.0	0.0	0.0
Replicate F							0.000	0.000	0.000
Replicate Prob(F)							1.0000	1.0000	1.0000
Treatment F							0.000	0.000	0.000
Treatment Prob(F)							1.0000	1.0000	1.0000

LSU AgCenter
Rice Research Station
Delayed Applications of Glyphosate in Soybean

Trial ID: 05-CS-24
Location: RRS-South Unit

Pest Code							ECHCG	ECHCG	ECHCG
Pest Name							Barnyardgrass	Barnyardgrass	Barnyardgrass
Crop Name							Soybean	Soybean	Soybean
Rating Date							3-Aug-2005	17-Aug-2005	7-Sep-2005
Rating Data Type							Control	Control	Control
Rating Unit							%	%	%
Trt-Eval Interval							6 WAE	8 WAE	11 WAE
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	Nontreated						0	0	0
2	Roundup Original Max	5.5	L	17.5	OZ/A	2 WAE	95	98	97
3	Roundup Original Max	5.5	L	17.5	OZ/A	5 WAE	78	86	94
4	Roundup Original Max	5.5	L	17.5	OZ/A	2 WAE	99	99	99
4	Roundup Original Max	5.5	L	17.5	OZ/A	5 WAE			
5	Roundup Original Max	5.5	L	17.5	OZ/A	2 WAE	99	99	99
5	Roundup Original Max	5.5	L	17.5	OZ/A	R1			
6	Roundup Original Max	5.5	L	17.5	OZ/A	2 WAE	94	99	99
6	Roundup Original Max	5.5	L	17.5	OZ/A	R3			
7	Roundup Original Max	5.5	L	17.5	OZ/A	2 WAE	98	99	99
7	Roundup Original Max	5.5	L	17.5	OZ/A	5 WAE			
7	Roundup Original Max	5.5	L	17.5	OZ/A	R3			
8	Roundup Original Max	5.5	L	17.5	OZ/A	2 WAE	97	98	97
8	Roundup Original Max	5.5	L	17.5	OZ/A	R1			
8	Roundup Original Max	5.5	L	17.5	OZ/A	R3			
LSD (P=.05)							4.2	2.1	3.5
Standard Deviation							2.8	1.4	2.4
CV							3.43	1.69	2.82
Replicate F							1.661	0.300	1.043
Replicate Prob(F)							0.2073	0.8246	0.3951
Treatment F							579.518	2332.352	826.290
Treatment Prob(F)							0.0001	0.0001	0.0001

LSU AgCenter
Rice Research Station
Delayed Applications of Glyphosate in Soybean

Trial ID: 05-CS-24
Location: RRS-South Unit

Pest Code							BRAPP	BRAPP	BRAPP
Pest Name							Broadleaf signalgrass	Broadleaf signalgrass	Broadleaf signalgrass
Crop Name							Soybean	Soybean	Soybean
Rating Date							20-Jul-2005	17-Aug-2005	7-Sep-2005
Rating Data Type							Control	Control	Control
Rating Unit							%	%	%
Trt-Eval Interval							4 WAE	8 WAE	11 WAE
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	Nontreated						0	0	0
2	Roundup Original Max	5.5	L	17.5	OZ/A	2 WAE	95	99	97
3	Roundup Original Max	5.5	L	17.5	OZ/A	5 WAE		93	98
4	Roundup Original Max	5.5	L	17.5	OZ/A	2 WAE	98	99	99
4	Roundup Original Max	5.5	L	17.5	OZ/A	5 WAE			
5	Roundup Original Max	5.5	L	17.5	OZ/A	2 WAE	96	99	99
5	Roundup Original Max	5.5	L	17.5	OZ/A	R1			
6	Roundup Original Max	5.5	L	17.5	OZ/A	2 WAE	98	99	99
6	Roundup Original Max	5.5	L	17.5	OZ/A	R3			
7	Roundup Original Max	5.5	L	17.5	OZ/A	2 WAE	96	99	99
7	Roundup Original Max	5.5	L	17.5	OZ/A	5 WAE			
7	Roundup Original Max	5.5	L	17.5	OZ/A	R3			
8	Roundup Original Max	5.5	L	17.5	OZ/A	2 WAE	98	99	99
8	Roundup Original Max	5.5	L	17.5	OZ/A	R1			
8	Roundup Original Max	5.5	L	17.5	OZ/A	R3			
LSD (P=.05)							2.3	1.5	1.6
Standard Deviation							1.6	1.0	1.1
CV							1.89	1.22	1.23
Replicate F							2.265	0.952	1.630
Replicate Prob(F)							0.1178	0.4343	0.2142
Treatment F							2172.794	4415.723	4320.254
Treatment Prob(F)							0.0001	0.0001	0.0001

LSU AgCenter
Rice Research Station
Delayed Applications of Glyphosate in Soybean

Trial ID: 05-CS-24
Location: RRS-South Unit

Pest Code							CYPES	CYPES	CYPES
Pest Name							Yellow nutsedge	Yellow nutsedge	Yellow nutsedge
Crop Name							Soybean	Soybean	Soybean
Rating Date							20-Jul-2005	17-Aug-2005	7-Sep-2005
Rating Data Type							Control	Control	Control
Rating Unit							%	%	%
Trt-Eval Interval							4 WAE	8 WAE	11 WAE
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	Nontreated						0	0	0
2	Roundup Original Max	5.5	L	17.5	OZ/A	2 WAE	83	93	91
3	Roundup Original Max	5.5	L	17.5	OZ/A	5 WAE		87	89
4	Roundup Original Max	5.5	L	17.5	OZ/A	2 WAE	84	95	95
4	Roundup Original Max	5.5	L	17.5	OZ/A	5 WAE			
5	Roundup Original Max	5.5	L	17.5	OZ/A	2 WAE	83	96	94
5	Roundup Original Max	5.5	L	17.5	OZ/A	R1			
6	Roundup Original Max	5.5	L	17.5	OZ/A	2 WAE	87	87	92
6	Roundup Original Max	5.5	L	17.5	OZ/A	R3			
7	Roundup Original Max	5.5	L	17.5	OZ/A	2 WAE	84	95	95
7	Roundup Original Max	5.5	L	17.5	OZ/A	5 WAE			
7	Roundup Original Max	5.5	L	17.5	OZ/A	R3			
8	Roundup Original Max	5.5	L	17.5	OZ/A	2 WAE	79	94	95
8	Roundup Original Max	5.5	L	17.5	OZ/A	R1			
8	Roundup Original Max	5.5	L	17.5	OZ/A	R3			
LSD (P=.05)							7.1	5.0	2.4
Standard Deviation							4.8	3.4	1.6
CV							6.72	4.17	1.97
Replicate F							4.623	0.125	2.229
Replicate Prob(F)							0.0153	0.9445	0.1162
Treatment F							173.388	379.393	1682.687
Treatment Prob(F)							0.0001	0.0001	0.0001

LSU AgCenter
Rice Research Station
Delayed Applications of Glyphosate in Soybean

Trial ID: 05-CS-24
Location: RRS-South Unit

Pest Code							MEOCO	MEOCO	MEOCO	
Pest Name							Redweed	Redweed	Redweed	
Crop Name							Soybean	Soybean	Soybean	Soybean
Rating Date							20-Jul-2005	17-Aug-2005	7-Sep-2005	19-Oct-2005
Rating Data Type							Control	Control	Control	Yield
Rating Unit							%	%	%	bu/A
Trt-Eval Interval							4 WAE	8 WAE	11 WAE	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage				
1	Nontreated						0	0	0	27
2	Roundup Original Max	5.5	L	17.5	OZ/A	2 WAE	97	97	98	48
3	Roundup Original Max	5.5	L	17.5	OZ/A	5 WAE		96	95	33
4	Roundup Original Max	5.5	L	17.5	OZ/A	2 WAE	95	99	98	53
4	Roundup Original Max	5.5	L	17.5	OZ/A	5 WAE				
5	Roundup Original Max	5.5	L	17.5	OZ/A	2 WAE	96	99	99	51
5	Roundup Original Max	5.5	L	17.5	OZ/A	R1				
6	Roundup Original Max	5.5	L	17.5	OZ/A	2 WAE	96	99	99	52
6	Roundup Original Max	5.5	L	17.5	OZ/A	R3				
7	Roundup Original Max	5.5	L	17.5	OZ/A	2 WAE	96	97	97	51
7	Roundup Original Max	5.5	L	17.5	OZ/A	5 WAE				
7	Roundup Original Max	5.5	L	17.5	OZ/A	R3				
8	Roundup Original Max	5.5	L	17.5	OZ/A	2 WAE	97	99	98	48
8	Roundup Original Max	5.5	L	17.5	OZ/A	R1				
8	Roundup Original Max	5.5	L	17.5	OZ/A	R3				
LSD (P=.05)							2.6	2.8	2.6	5.5
Standard Deviation							1.7	1.9	1.8	3.7
CV							2.1	2.21	2.1	8.21
Replicate F							4.469	1.376	2.934	1.602
Replicate Prob(F)							0.0173	0.2788	0.0584	0.2204
Treatment F							1761.881	1336.412	1483.672	28.330
Treatment Prob(F)							0.0001	0.0001	0.0001	0.0001

Treatment Application

Application Description: 05-CS-25

	A	B	C	D
Date ..... :	June 15	June 30	July 6	July 20
Time of day..... :	2:00 pm	2:30 pm	7:30 am	7:30 am
Application method ..... :	Broadcast	Broadcast	Broadcast	Broadcast
Application timing ..... :	PRE	POST	POSTAN	POSTAN
Placement ..... :	Soil	Foliar	Foliar	Foliar
Air temperature ..... :	93	94	79	81
Relative humidity (%)..... :	80	70	78	90
Wind (mph/direction)..... :	2-3 NW	4-5 SW	2-3 N	3-4 NE
Dew presence (Y/N) ..... :	NA	N	Y	Y
Soil temperature ..... :	NA	NA	NA	NA
Soil moisture..... :	Adequate	Dry	Adequate	Adequate
Cloud cover (%) ..... :	25	40	10	5
Applied by ..... :	JB	JB	JB	JB, RR

Application Equipment:

Equipment..... :	CO_2 backpack	CO_2 backpack	CO_2 backpack	CO_2 backpack
Operating pressure..... :	28 psi	32 psi	32 psi	32 psi
Nozzle type/size ..... :	Airmix 02	Airmix 015	Airmix 015	Airmix 015
Nozzle spacing/no...... :	20 in / 5	20 in / 5	20 in / 5	20 in / 5
Boom height ..... :	17 in	18 in	18 in	18 in
Ground speed (mph) ..... :	3	3	3	2
Incorporation & depth ..... :	NA	NA	NA	NA

Crop Stage at Application:

Height ..... :	NA	3-5 in	6-8 in	15 in
No. leaves/tillers ..... :	NA	V2	V4	V8

LSU AgCenter
Rice Research Station
Influence of Soil-Applied Herbicides on Timing of Glyphosate Applications

Trial ID: 05-CS-25
Location: RRS-South Unit

Pest Code											
Pest Name											
Crop Name							Soybean	Soybean	Soybean	Soybean	Soybean
Rating Date							30-Jun-2005	7-Jul-2005	20-Jul-2005	17-Aug-2005	14-Sep-2005
Rating Data Type							Injury	Injury	Injury	Injury	Injury
Rating Unit							%	%	%	%	%
Trt-Eval Interval							1 WAE	2 WAE	4 WAE	8 WAE	12 WAE
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage					
1	Nontreated						0	0	0	0	0
2	Valor	51	WP	1.0	OZ/A	PRE	0	0	0	0	0
2	Roundup Original Max	5.5	L	23.3	OZ/A	POST					
3	Valor	51	WP	1.5	OZ/A	PRE	0	0	0	0	0
3	Roundup Original Max	5.5	L	23.3	OZ/A	POST					
4	Valor	51	WP	2.0	OZ/A	PRE	3	0	0	0	0
4	Roundup Original Max	5.5	L	23.3	OZ/A	POST					
5	Valor	51	WP	2.5	OZ/A	PRE	4	0	0	0	0
5	Roundup Original Max	5.5	L	23.3	OZ/A	POST					
6	Valor	51	WP	3.0	OZ/A	PRE	9	5	0	0	0
6	Roundup Original Max	5.5	L	23.3	OZ/A	POST					
7	Roundup Original Max	5.5	L	17.5	OZ/A	POST		0	0	0	0
8	Roundup Original Max	5.5	L	23.3	OZ/A	POST		0	0	0	0
9	Roundup Original Max	5.5	L	17.5	OZ/A	POST		0	0	0	0
9	Roundup Original Max	5.5	L	17.5	OZ/A	POSTAN					
10	Roundup Original Max	5.5	L	23.3	OZ/A	POST		0	0	0	0
10	Roundup Original Max	5.5	L	23.3	OZ/A	POSTAN					
LSD (P=.05)							3.1	0.0	0.0	0.0	0.0
Standard Deviation							2.0	0.0	0.0	0.0	0.0
CV							81.65	0.0	0.0	0.0	0.0
Replicate F							0.000	0.000	0.000	0.000	0.000
Replicate Prob(F)							1.0000	1.0000	1.0000	1.0000	1.0000
Treatment F							11.400	0.000	0.000	0.000	0.000
Treatment Prob(F)							0.0001	1.0000	1.0000	1.0000	1.0000

LSU AgCenter
Rice Research Station
Influence of Soil-Applied Herbicides on Timing of Glyphosate Applications

Trial ID: 05-CS-25
Location: RRS-South Unit

Pest Code							ECHCG	ECHCG	BRAPP
Pest Name							Barnyardgrass	Barnyardgrass	Broadleaf signalgrass
Crop Name							Soybean	Soybean	Soybean
Rating Date							17-Aug-2005	14-Sep-2005	7-Jul-2005
Rating Data Type							Control	Control	Control
Rating Unit							%	%	%
Trt-Eval Interval							8 WAE	12 WAE	2 WAE
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	Nontreated						0	0	0
2	Valor	51	WP	1.0	OZ/A	PRE	80	80	99
2	Roundup Original Max	5.5	L	23.3	OZ/A	POST			
3	Valor	51	WP	1.5	OZ/A	PRE	86	86	99
3	Roundup Original Max	5.5	L	23.3	OZ/A	POST			
4	Valor	51	WP	2.0	OZ/A	PRE	98	98	44
4	Roundup Original Max	5.5	L	23.3	OZ/A	POST			
5	Valor	51	WP	2.5	OZ/A	PRE	97	97	45
5	Roundup Original Max	5.5	L	23.3	OZ/A	POST			
6	Valor	51	WP	3.0	OZ/A	PRE	98	99	64
6	Roundup Original Max	5.5	L	23.3	OZ/A	POST			
7	Roundup Original Max	5.5	L	17.5	OZ/A	POST	73	73	99
8	Roundup Original Max	5.5	L	23.3	OZ/A	POST	78	78	99
9	Roundup Original Max	5.5	L	17.5	OZ/A	POST	96	99	99
9	Roundup Original Max	5.5	L	17.5	OZ/A	POSTAN			
10	Roundup Original Max	5.5	L	23.3	OZ/A	POST	99	99	99
10	Roundup Original Max	5.5	L	23.3	OZ/A	POSTAN			
LSD (P=.05)							6.2	6.0	4.8
Standard Deviation							4.3	4.1	3.3
CV							5.3	5.1	4.43
Replicate F							0.434	0.639	1.297
Replicate Prob(F)							0.7307	0.5963	0.2958
Treatment F							197.086	213.974	450.830
Treatment Prob(F)							0.0001	0.0001	0.0001

LSU AgCenter
Rice Research Station
Influence of Soil-Applied Herbicides on Timing of Glyphosate Applications

Trial ID: 05-CS-25
Location: RRS-South Unit

Pest Code							BRAPP	BRAPP	BRAPP
Pest Name							Broadleaf signalgrass	Broadleaf signalgrass	Broadleaf signalgrass
Crop Name							Soybean	Soybean	Soybean
Rating Date							20-Jul-2005	17-Aug-2005	14-Sep-2005
Rating Data Type							Control	Control	Control
Rating Unit							%	%	%
Trt-Eval Interval							4 WAE	8 WAE	12 WAE
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	Nontreated						0	0	0
2	Valor	51	WP	1.0	OZ/A	PRE	88	85	81
2	Roundup Original Max	5.5	L	23.3	OZ/A	POST			
3	Valor	51	WP	1.5	OZ/A	PRE	89	91	90
3	Roundup Original Max	5.5	L	23.3	OZ/A	POST			
4	Valor	51	WP	2.0	OZ/A	PRE	97	98	98
4	Roundup Original Max	5.5	L	23.3	OZ/A	POST			
5	Valor	51	WP	2.5	OZ/A	PRE	99	98	96
5	Roundup Original Max	5.5	L	23.3	OZ/A	POST			
6	Valor	51	WP	3.0	OZ/A	PRE	99	99	97
6	Roundup Original Max	5.5	L	23.3	OZ/A	POST			
7	Roundup Original Max	5.5	L	17.5	OZ/A	POST	69	76	73
8	Roundup Original Max	5.5	L	23.3	OZ/A	POST	74	83	81
9	Roundup Original Max	5.5	L	17.5	OZ/A	POST	64	97	96
9	Roundup Original Max	5.5	L	17.5	OZ/A	POSTAN			
10	Roundup Original Max	5.5	L	23.3	OZ/A	POST	65	99	99
10	Roundup Original Max	5.5	L	23.3	OZ/A	POSTAN			
LSD (P=.05)							5.0	6.5	7.5
Standard Deviation							3.4	4.5	5.1
CV							4.62	5.4	6.34
Replicate F							1.362	1.029	0.466
Replicate Prob(F)							0.2755	0.3954	0.7086
Treatment F							296.994	182.608	134.934
Treatment Prob(F)							0.0001	0.0001	0.0001

LSU AgCenter
Rice Research Station
Influence of Soil-Applied Herbicides on Timing of Glyphosate Applications

Trial ID: 05-CS-25
Location: RRS-South Unit

Pest Code							CYPES	CYPES	CYPES
Pest Name							Yellow nutsedge	Yellow nutsedge	Yellow nutsedge
Crop Name							Soybean	Soybean	Soybean
Rating Date							7-Jul-2005	20-Jul-2005	17-Aug-2005
Rating Data Type							Control	Control	Control
Rating Unit							%	%	%
Trt-Eval Interval							2 WAE	4 WAE	8 WAE
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	Nontreated						0	0	0
2	Valor	51	WP	1.0	OZ/A	PRE	86	86	83
2	Roundup Original Max	5.5	L	23.3	OZ/A	POST			
3	Valor	51	WP	1.5	OZ/A	PRE	89	88	84
3	Roundup Original Max	5.5	L	23.3	OZ/A	POST			
4	Valor	51	WP	2.0	OZ/A	PRE	38	92	95
4	Roundup Original Max	5.5	L	23.3	OZ/A	POST			
5	Valor	51	WP	2.5	OZ/A	PRE	39	93	95
5	Roundup Original Max	5.5	L	23.3	OZ/A	POST			
6	Valor	51	WP	3.0	OZ/A	PRE	53	94	95
6	Roundup Original Max	5.5	L	23.3	OZ/A	POST			
7	Roundup Original Max	5.5	L	17.5	OZ/A	POST	84	58	73
8	Roundup Original Max	5.5	L	23.3	OZ/A	POST	85	71	80
9	Roundup Original Max	5.5	L	17.5	OZ/A	POST	80	58	86
9	Roundup Original Max	5.5	L	17.5	OZ/A	POSTAN			
10	Roundup Original Max	5.5	L	23.3	OZ/A	POST	84	64	94
10	Roundup Original Max	5.5	L	23.3	OZ/A	POSTAN			
LSD (P=.05)							6.1	6.3	5.5
Standard Deviation							4.2	4.4	3.8
CV							6.61	6.22	4.81
Replicate F							0.318	2.751	0.512
Replicate Prob(F)							0.8119	0.0621	0.6773
Treatment F							205.121	172.633	229.566
Treatment Prob(F)							0.0001	0.0001	0.0001

LSU AgCenter
Rice Research Station
Influence of Soil-Applied Herbicides on Timing of Glyphosate Applications

Trial ID: 05-CS-25
Location: RRS-South Unit

Pest Code							CYPES	MEOCO	MEOCO	MEOCO
Pest Name							Yellow nutsedge	Redweed	Redweed	Redweed
Crop Name							Soybean	Soybean	Soybean	Soybean
Rating Date							14-Sep-2005	7-Jul-2005	20-Jul-2005	17-Aug-2005
Rating Data Type							Control	Control	Control	Control
Rating Unit							%	%	%	%
Trt-Eval Interval							12 WAE	2 WAE	4 WAE	8 WAE
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage				
1	Nontreated						0	0	0	0
2	Valor	51	WP	1.0	OZ/A	PRE	81	99	89	94
2	Roundup Original Max	5.5	L	23.3	OZ/A	POST				
3	Valor	51	WP	1.5	OZ/A	PRE	84	99	94	95
3	Roundup Original Max	5.5	L	23.3	OZ/A	POST				
4	Valor	51	WP	2.0	OZ/A	PRE	92	96	98	98
4	Roundup Original Max	5.5	L	23.3	OZ/A	POST				
5	Valor	51	WP	2.5	OZ/A	PRE	93	97	98	99
5	Roundup Original Max	5.5	L	23.3	OZ/A	POST				
6	Valor	51	WP	3.0	OZ/A	PRE	95	99	99	99
6	Roundup Original Max	5.5	L	23.3	OZ/A	POST				
7	Roundup Original Max	5.5	L	17.5	OZ/A	POST	69	99	60	88
8	Roundup Original Max	5.5	L	23.3	OZ/A	POST	81	99	63	91
9	Roundup Original Max	5.5	L	17.5	OZ/A	POST	88	99	68	98
9	Roundup Original Max	5.5	L	17.5	OZ/A	POSTAN				
10	Roundup Original Max	5.5	L	23.3	OZ/A	POST	97	99	59	99
10	Roundup Original Max	5.5	L	23.3	OZ/A	POSTAN				
LSD (P=.05)							5.5	1.4	8.1	3.5
Standard Deviation							3.8	0.9	5.6	2.4
CV							4.84	1.06	7.69	2.81
Replicate F							0.565	1.678	2.015	1.597
Replicate Prob(F)							0.6430	0.1952	0.1355	0.2133
Treatment F							230.294	4440.204	120.385	633.474
Treatment Prob(F)							0.0001	0.0001	0.0001	0.0001

LSU AgCenter
Rice Research Station
Influence of Soil-Applied Herbicides on Timing of Glyphosate Applications

Trial ID: 05-CS-25
Location: RRS-South Unit

Pest Code							MEOCO	
Pest Name							Redweed	
Crop Name							Soybean	Soybean
Rating Date							14-Sep-2005	19-Oct-2005
Rating Data Type							Control	Yield
Rating Unit							%	bu/A
Trt-Eval Interval							12 WAE	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage		
1	Nontreated						0	30
2	Valor	51	WP	1.0	OZ/A	PRE	94	45
2	Roundup Original Max	5.5	L	23.3	OZ/A	POST		
3	Valor	51	WP	1.5	OZ/A	PRE	95	49
3	Roundup Original Max	5.5	L	23.3	OZ/A	POST		
4	Valor	51	WP	2.0	OZ/A	PRE	99	48
4	Roundup Original Max	5.5	L	23.3	OZ/A	POST		
5	Valor	51	WP	2.5	OZ/A	PRE	99	52
5	Roundup Original Max	5.5	L	23.3	OZ/A	POST		
6	Valor	51	WP	3.0	OZ/A	PRE	99	47
6	Roundup Original Max	5.5	L	23.3	OZ/A	POST		
7	Roundup Original Max	5.5	L	17.5	OZ/A	POST	88	43
8	Roundup Original Max	5.5	L	23.3	OZ/A	POST	88	47
9	Roundup Original Max	5.5	L	17.5	OZ/A	POST	99	50
9	Roundup Original Max	5.5	L	17.5	OZ/A	POSTAN		
10	Roundup Original Max	5.5	L	23.3	OZ/A	POST	99	51
10	Roundup Original Max	5.5	L	23.3	OZ/A	POSTAN		
LSD (P=.05)							3.9	5.7
Standard Deviation							2.7	3.9
CV							3.14	8.55
Replicate F							1.000	3.713
Replicate Prob(F)							0.4079	0.0234
Treatment F							511.171	9.624
Treatment Prob(F)							0.0001	0.0001

Treatment Application

Application Description: 05-CS-26

	A	B	C	D
Date ..... :	June 15	June 30	July 7	July 13
Time of day..... :	5:30 pm	2:30 pm	1:30 pm	7:00 am
Application method ..... :	Broadcast	Broadcast	Broadcast	Broadcast
Application timing ..... :	PRE	POST	POSTAN	POST2
Placement ..... :	Soil	Foliar	Foliar	Foliar
Air temperature ..... :	93	94	92	78
Relative humidity (%)..... :	80	70	73	75
Wind (mph/direction)..... :	2-3 NW	4-5 SW	0	0
Dew presence (Y/N) ..... :	NA	N	N	Y
Soil temperature ..... :	NA	NA	NA	NA
Soil moisture..... :	Adequate	Dry	Adequate	Adequate
Cloud cover (%) ..... :	25	40	60	50
Applied by ..... :	JB	JB	JB	JB, RR

Application Equipment:

Equipment..... :	CO_2 backpack	CO_2 backpack	CO_2 backpack	CO_2 backpack
Operating pressure..... :	28 psi	32 psi	32 psi	32 psi
Nozzle type/size ..... :	Airmix 02	Airmix 015	Airmix 015	Airmix 015
Nozzle spacing/no...... :	20 in / 5	20 in / 5	20 in / 5	20 in / 5
Boom height ..... :	17 in	18 in	18 in	18 in
Ground speed (mph) ..... :	3	3	3	2
Incorporation & depth ..... :	NA	NA	NA	NA

Crop Stage at Application:

Height ..... :	NA	3-5 in	6-8 in	12 in
No. leaves/tillers ..... :	NA	V2	V4	V6

LSU AgCenter
Rice Research Station
Glyphosate Weed Control Programs in Soybean

Trial ID: 05-CS-26
Location: RRS-South Unit

Pest Code									
Pest Name									
Crop Name							Soybean	Soybean	Soybean
Rating Date							7-Jul-2005	27-Jul-2005	7-Sep-2005
Rating Data Type							Injury	Injury	Injury
Rating Unit							%	%	%
Trt-Eval Interval							2 WAE	5 WAE	11 WAE
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	Nontreated						0	0	0
2	Valor	51	WP	2	OZ/A	PRE	0	0	0
2	Roundup Original Max	5.5	L	19.6	OZ/A	POSTAN			
3	Roundup Original Max	5.5	L	19.6	OZ/A	POST	0	0	0
4	Sequence	5.25	L	2.5	PT/A	POST	5	0	0
5	Sequence	5.25	L	3.0	PT/A	POST	4	0	0
6	Sequence	5.25	L	3.5	PT/A	POST	8	0	0
7	Roundup Original Max	5.5	L	19.6	OZ/A	POST	9	2	0
7	Prowl H2O	3.8	L	2	PT/A	POST			
8	Roundup Original Max	5.5	L	19.6	OZ/A	POST	18	9	4
8	Prowl	3.3	EC	2.3	PT/A	POST			
9	Roundup Original Max	5.5	L	19.6	OZ/A	POST	0	0	0
9	Roundup Original Max	5.5	L	19.6	OZ/A	POST2			
LSD (P=.05)							2.0	1.6	0.8
Standard Deviation							1.4	1.1	0.6
CV							29.17	95.21	148.46
Replicate F							0.153	1.591	1.000
Replicate Prob(F)							0.9270	0.2176	0.4098
Treatment F							71.103	27.304	16.333
Treatment Prob(F)							0.0001	0.0001	0.0001

LSU AgCenter
Rice Research Station
Glyphosate Weed Control Programs in Soybean

Trial ID: 05-CS-26
Location: RRS-South Unit

Pest Code							ECHCG	ECHCG	BRAPP
Pest Name							Barnyardgrass	Barnyardgrass	Broadleaf signalgrass
Crop Name							Soybean	Soybean	Soybean
Rating Date							27-Jul-2005	7-Sep-2005	7-Jul-2005
Rating Data Type							Control	Control	Control
Rating Unit							%	%	%
Trt-Eval Interval							5 WAE	11 WAE	2 WAE
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	Nontreated						0	0	0
2	Valor	51	WP	2	OZ/A	PRE	99	99	50
2	Roundup Original Max	5.5	L	19.6	OZ/A	POSTAN			
3	Roundup Original Max	5.5	L	19.6	OZ/A	POST	89	81	99
4	Sequence	5.25	L	2.5	PT/A	POST	99	97	99
5	Sequence	5.25	L	3.0	PT/A	POST	99	99	99
6	Sequence	5.25	L	3.5	PT/A	POST	99	99	99
7	Roundup Original Max	5.5	L	19.6	OZ/A	POST	93	91	99
7	Prowl H2O	3.8	L	2	PT/A	POST			
8	Roundup Original Max	5.5	L	19.6	OZ/A	POST	95	85	99
8	Prowl	3.3	EC	2.3	PT/A	POST			
9	Roundup Original Max	5.5	L	19.6	OZ/A	POST	97	99	99
9	Roundup Original Max	5.5	L	19.6	OZ/A	POST2			
LSD (P=.05)							5.2	8.2	2.0
Standard Deviation							3.6	5.6	1.4
CV							4.16	6.73	1.65
Replicate F							0.921	2.095	1.000
Replicate Prob(F)							0.4457	0.1274	0.4098
Treatment F							329.373	129.952	2637.420
Treatment Prob(F)							0.0001	0.0001	0.0001

LSU AgCenter
Rice Research Station
Glyphosate Weed Control Programs in Soybean

Trial ID: 05-CS-26
Location: RRS-South Unit

Pest Code							BRAPP	BRAPP
Pest Name							Broadleaf signalgrass	Broadleaf signalgrass
Crop Name							Soybean	Soybean
Rating Date							27-Jul-2005	7-Sep-2005
Rating Data Type							Control	Control
Rating Unit							%	%
Trt-Eval Interval							5 WAE	11 WAE
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage		
1	Nontreated						0	0
2	Valor	51	WP	2	OZ/A	PRE	99	99
2	Roundup Original Max	5.5	L	19.6	OZ/A	POSTAN		
3	Roundup Original Max	5.5	L	19.6	OZ/A	POST	85	83
4	Sequence	5.25	L	2.5	PT/A	POST	99	96
5	Sequence	5.25	L	3.0	PT/A	POST	98	99
6	Sequence	5.25	L	3.5	PT/A	POST	99	99
7	Roundup Original Max	5.5	L	19.6	OZ/A	POST	94	91
7	Prowl H2O	3.8	L	2	PT/A	POST		
8	Roundup Original Max	5.5	L	19.6	OZ/A	POST	94	85
8	Prowl	3.3	EC	2.3	PT/A	POST		
9	Roundup Original Max	5.5	L	19.6	OZ/A	POST	98	99
9	Roundup Original Max	5.5	L	19.6	OZ/A	POST2		
LSD (P=.05)							3.7	6.8
Standard Deviation							2.6	4.6
CV							3.01	5.56
Replicate F							0.232	2.949
Replicate Prob(F)							0.8730	0.0531
Treatment F							634.933	189.721
Treatment Prob(F)							0.0001	0.0001

LSU AgCenter
Rice Research Station
Glyphosate Weed Control Programs in Soybean

Trial ID: 05-CS-26
Location: RRS-South Unit

Pest Code							CYPES	CYPES	CYPES
Pest Name							Yellow nutsedge	Yellow nutsedge	Yellow nutsedge
Crop Name							Soybean	Soybean	Soybean
Rating Date							7-Jul-2005	27-Jul-2005	7-Sep-2005
Rating Data Type							Control	Control	Control
Rating Unit							%	%	%
Trt-Eval Interval							2 WAE	5 WAE	11 WAE
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage			
1	Nontreated						0	0	0
2	Valor	51	WP	2	OZ/A	PRE	44	86	91
2	Roundup Original Max	5.5	L	19.6	OZ/A	POSTAN			
3	Roundup Original Max	5.5	L	19.6	OZ/A	POST	76	66	76
4	Sequence	5.25	L	2.5	PT/A	POST	76	89	91
5	Sequence	5.25	L	3.0	PT/A	POST	83	94	94
6	Sequence	5.25	L	3.5	PT/A	POST	79	91	95
7	Roundup Original Max	5.5	L	19.6	OZ/A	POST	79	78	74
7	Prowl H2O	3.8	L	2	PT/A	POST			
8	Roundup Original Max	5.5	L	19.6	OZ/A	POST	80	80	79
8	Prowl	3.3	EC	2.3	PT/A	POST			
9	Roundup Original Max	5.5	L	19.6	OZ/A	POST	79	91	96
9	Roundup Original Max	5.5	L	19.6	OZ/A	POST2			
LSD (P=.05)							7.6	6.6	6.2
Standard Deviation							5.2	4.5	4.2
CV							7.9	6.04	5.47
Replicate F							3.465	1.900	1.762
Replicate Prob(F)							0.0320	0.1566	0.1813
Treatment F							110.376	168.712	204.187
Treatment Prob(F)							0.0001	0.0001	0.0001

LSU AgCenter
Rice Research Station
Glyphosate Weed Control Programs in Soybean

Trial ID: 05-CS-26
Location: RRS-South Unit

Pest Code							MEOCO	MEOCO	MEOCO	
Pest Name							Redweed	Redweed	Redweed	
Crop Name							Soybean	Soybean	Soybean	Soybean
Rating Date							7-Jul-2005	27-Jul-2005	7-Sep-2005	19-Oct-2005
Rating Data Type							Control	Control	Control	Yield
Rating Unit							%	%	%	bu/A
Trt-Eval Interval							2 WAE	5 WAE	11 WAE	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage				
1	Nontreated						0	0	0	38
2	Valor	51	WP	2	OZ/A	PRE	99	99	99	50
2	Roundup Original Max	5.5	L	19.6	OZ/A	POSTAN				
3	Roundup Original Max	5.5	L	19.6	OZ/A	POST	99	63	89	46
4	Sequence	5.25	L	2.5	PT/A	POST	99	99	97	48
5	Sequence	5.25	L	3.0	PT/A	POST	99	99	99	54
6	Sequence	5.25	L	3.5	PT/A	POST	99	99	98	54
7	Roundup Original Max	5.5	L	19.6	OZ/A	POST	99	94	94	55
7	Prowl H2O	3.8	L	2	PT/A	POST				
8	Roundup Original Max	5.5	L	19.6	OZ/A	POST	99	95	94	46
8	Prowl	3.3	EC	2.3	PT/A	POST				
9	Roundup Original Max	5.5	L	19.6	OZ/A	POST	99	98	99	49
9	Roundup Original Max	5.5	L	19.6	OZ/A	POST2				
LSD (P=.05)							0.0	2.1	3.9	6.1
Standard Deviation							0.0	1.5	2.7	4.1
CV							0.0	1.76	3.11	8.51
Replicate F							0.000	0.707	0.742	4.057
Replicate Prob(F)							1.0000	0.5571	0.5375	0.0182
Treatment F							0.000	2065.699	590.140	6.529
Treatment Prob(F)							1.0000	0.0001	0.0001	0.0002

FOUNDATION SEED RICE PROGRAM

Lawrence M. White III

INTRODUCTION

Foundation seed rice has been produced by the Rice Research Station for distribution to Louisiana farmers since 1949. The Rice Research Station's seed rice program was instituted in response to the critical shortage of pure planting stocks that existed during and after World War II. Since its inception, the program has made available to Louisiana growers more than 149,000 cwt. of pedigreed stock of 37 rice varieties.

Concurrent with the distribution of pure seed by the Rice Research Station, an industry was developed in Louisiana an industry comprised of independent seed dealers through whom farmers could conduct trade in registered and certified classes of pedigreed rice.

Foundation seed rice, the planting stock from which registered and certified seed are produced, is the farmer's link with the work of the plant breeder. It is the product of hybridization and of successive generations of selection and testing to establish its value as crop seed and eventually as a commercial commodity. For this reason, foundation seed and the basic stocks from which it is produced must be grown and conditioned in a manner that will ensure that viability is maintained and that it be genetically pure and free from mechanical mixtures or contamination by noxious weeds.

Through the Rice Research Station's seed program, Louisiana farmers may obtain seed rice of improved varieties developed through the Louisiana Agricultural Experiment Station breeding program and of established commercial varieties originating either at Crowley or at research centers in neighboring states.

To fulfill the objectives of the seed program, the Rice Research Station uses the personnel, land, machinery, and other facilities needed to plant, harvest, condition, and store its annual seed rice crop. The production of breeder seed, planting stock for the foundation fields, and the maintenance of purity in commercial rice varieties are functions of the seed program. Breeder seed is sometimes grown within fields of foundation rice or in a special nursery set aside for propagating the Rice Research Station's seed stocks. The nursery also serves as a site for evaluating, purifying, and increasing selections from the Louisiana Agricultural Experiment Station breeding program that show promise as new varieties.

The distribution of pedigreed seed rice produced by the Rice Research Station is done according to a formula adopted by the Louisiana Seed Rice Growers Association. For each rice-producing parish, the amount of seed allotted is determined by the percentage of the state's total rice acreage grown in that parish during the previous crop year.

Personnel of the Louisiana Cooperative Extension Service, in cooperation with parish committees of the Seed Rice Growers Association, assist in the allocation of foundation seed rice. It is at the parish committee level that the allocation of seed to individual growers is decided. The county agents receive applications for seed rice from growers and handle information and publicity for the pure seed program.

In this state, the official seed-certifying agency for all crops is the Louisiana Department of Agriculture and Forestry. The rules and regulations pertaining to the certification of agricultural seeds are part of the Louisiana Seed Law. They are formulated by the Louisiana Seed Commission and enforced by the Agronomic Programs Division of the Louisiana Department of Agriculture and Forestry. Personnel of the Agronomic Programs Division, operating from district offices, conduct field inspections of growing rice and sampling of bagged rice for laboratory analyses, which consist of purity determinations and germination tests.

PRODUCTION PRACTICES

Each year, the Rice Research Station devotes approximately 80 acres of land to the production of foundation seed rice. To eliminate noxious weeds, especially red rice, that can disqualify rice from certification, the fields are fallowed for a 2-year period preceding planting. This also enables the fields to meet the crop history requirements specified in the seed rice regulations.

Seedbed preparation and grid sampling of foundation fields are performed in the fall. A variable rate application of potassium, phosphorus, sulfur, and zinc is applied according to grid sample results. Burndown herbicides are applied prior to seeding. The foundation fields are planted into a stale seedbed by means of a 24-runner minimum tillage drill. The breeder stock is planted at rates that may vary from 25 to 100 lb/A. The rice receives a preflood application of urea in which the rate of N may vary from 45 to 90 lb/A. A midseason application of N in rates from 21 to 55 lb/A is also applied.

Seedling grasses and weeds are controlled by means of commercially available herbicides applied by airplane. Similarly, aerial applications of insecticides are used to protect the fields from outbreaks of harmful insects.

Roguing of the rice fields for the removal of off-types, varietal mixtures, and noxious weeds begins at the onset of heading and continues until the rice is harvested. During this interval, the headed rice is inspected by personnel of the Agronomic Programs Division to determine whether it meets minimum field standards of the certifying agency.

The rice is harvested with a conventional combine and dried in the Rice Research Station's eight 21-inch diameter grain bins, equipped with vented drying floors and centrifugal fans with temperature-controlled heaters. The rice is dried to a moisture level of approximately 12%. During the storage period between drying and cleaning, the rice is treated with an insecticide to protect it from stored-grain insects.

Cleaning of foundation and breeder seed usually commences in late October and continues until late December. The rice first moves through an air-and-screen cleaner that removes chaff, straw, and other foreign material and grades the grain according to width and thickness.

It then flows through three length-grading machines that consist of rotating, indented metal cylinders. The first two remove small grains and broken or dehulled kernels of rice. The third one removes stemmy rice, grains that have very long awns that are attached to portions of the panicle. In the next phase of cleaning, the rice moves through a machine that performs precision grading of the grain by means of rotating perforated cylinders. This machine is designed to separate medium-grain and/or red rice from long-grain rice. It is also capable of removing shriveled and other slender kernels from medium-grain rice.

In the final phase of cleaning, the rice moves through a machine that aspirates the grain, removing any chaff, straw, and other foreign material from the conditioned product.

From the cleaning machines, foundation and breeder seed rice are bagged, assigned lot numbers, and placed in storage in the Rice Research Station's seed rice warehouse where they remain until they are distributed to Louisiana farmers.

The field and laboratory purity standards for foundation seed rice are very strict with regard to varietal mixtures and noxious weeds. In all phases of production, therefore, great care must be exercised to prevent these impurities from contaminating the seed stocks. To that end, it is routine procedure at the Rice Research Station to partially disassemble all planting and harvesting equipment and to clean it thoroughly with water and/or compressed air before using it in the field. The dryer and cleaning plant, including all elevators and other conveying equipment, are also subjected to meticulous cleaning and inspection before and after having been used in stubble fields. Therefore, tractors, plows, harrows, and land levelers are carefully washed before they enter land that is in a fallow cycle. These measures, together with the inspection and roguing, which are done during the growing season, help to ensure that foundation seed is genetically pure and free of mechanical mixtures and noxious weed seeds.

2005 ACTIVITIES

Of the 2622 cwt. of foundation seed rice sold in 2005, the varieties and quantities were as follows: Trenasse, 1019 cwt.; Cheniere, 583 cwt.; Cocodrie, 495 cwt.; Jupiter, 349 cwt.; Cypress, 73 cwt.; Toro-2, 41 cwt.; Bengal, 35 cwt.; Pirogue, 20 cwt.; and Ecrevisse, 7 cwt.

The Rice Research Station's foundation seed crop in 2005 consisted of 23 acres of Cheniere, 17 acres of Trenasse, 12 acres of Cocodrie, 7 acres of Jupiter, and 1 acre of Cypress.

Headrows of Jupiter, Cocodrie, Cypress, Trenasse, Cheniere, and Dellrose were grown for replenishment of breeder seed stocks.

RICE PHYSIOLOGY

INTRODUCTION

Plant growth regulators (PGRs) have a significant effect on crop production because of their ability to alter plant growth and development. Therefore, studies of PGR modifications to plant growth and development that improve rice production were conducted.

In greenhouse and small plot trials, emergence has been improved with PGRs that cause mesocotyl, coleoptile, and leaf elongation. The mesocotyl and coleoptile are short in semidwarf cultivars, and seeding more than 2 inches below the soil surface can result in poor stands. In addition, seedling height of semidwarf rice increases slowly, resulting in poor seedling vigor. Small plot studies were conducted to evaluate the effects of PGRs on seedling vigor of new and existing varieties and experimental lines under different management practices, including early planting, deep planting depth, conventional drill seeding, and suboptimal seeding rates.

At present, PGRs have been identified that can modify internode elongation, and modification of internode elongation can be beneficial. The reduction of internode elongation of select internodes can limit plant height and panicle exsertion. Studies of these particular responses to properly timed applications of PGRs show limitations on seed production in red rice. To address seed production in red rice, studies with PGRs that limit internode elongation were conducted.

Ratoon or second crop production in rice is directly dependent on growth from buds located at the base and at nodes on first crop stubble remaining after harvest. These buds remain dormant during the first crop. Plant growth regulators and stubble management were evaluated to determine the effect on ratoon crop growth and development.

Some PGRs are reported to increase grain yield directly. Several of these were evaluated.

To address the objectives of emergence and seedling vigor improvement, yield enhancement in rice, and seed suppression in red rice, PGRs were tested for their effects on rice and red rice growth and development.

NORTH UNIT GENERAL METHODOLOGY

Location: Rice Research Station, Crowley, LA (North Unit, Field N9-A)

Seeding Method/Depth/Rate: Drilled on 7-inch rows/3 inches/90 lb/A

Fertilizer: 8-24-24 with 3.5% Zn and 2% S at 300 lb/A by drill, 29 Mar
Urea (46% N) at 200 lb/A by airplane, 27 Apr
Urea (46% N) at 100 lb/A by airplane, 25 May and 8 June

Plot Size/Treated Area: 262.5 ft^2 – 8.75 (15 rows) x 30 ft

Seed Treater: Cement mixer

Sprayer: CO_2-driven, backpack, 35 psi, 15 GPA, 8001VS tips, 20-inch nozzle spacings

Planting Date: 30 Mar

Emergence: 7 Apr

Water Management: Flushed, 18 Apr; Permanent flood (3-inch/rain), 29 Apr; Pre-harvest drain, 18 July

Pertinent Rainfall: 0.2 inch, 6 Apr; 0.4 inch, 11 Apr; 0.7 inch, 24 Apr; 1.5 inches, 29 Apr

Growth Stage Definitions: Mid Tiller (MT), 1 to 2 tiller per plant
Internode Initiation (II), beginning of internode elongation inside main stem
Panicle Differentiation (PD), 2-mm panicle inside main stem
Early Boot (EB), 1- to 2-inch panicle inside main stem
Mid Boot (MB), 3- to 5-inch panicle inside main stem, flag leaf collar first visible
Late Boot (LB), 6- to 8-inch panicle inside sheath of flag leaf of main stem
Heading (HD), 50 to 75% of stems with some degree of panicle exsertion
Milk Stage (MS), endosperm is white liquid in uppermost florets
Dough Stage (DS), endosperm is white dough in uppermost florets
Physiological Maturity (PM), endosperm is hard/translucent in uppermost florets

Pesticide(s): Dithane DF (4 oz/cwt) seed treatment, 17 Mar
Icon (0.9 fl oz/A) seed treatment, 17 Mar
Stam (1 gal/A) by airplane, 15 Apr
Arrosolo (1 gal/A) by airplane, 27 Apr
Karate (2 fl oz/A) by airplane, 10 May and 24 June
Londax (2 oz/A) by airplane, 10 and 25 May
Clincher (15 fl oz/A) by airplane, 17 May
Stratego (1 pt/A) by airplane, 24 June

Plant Growth Regulator(s): Release (0.35 oz/cwt) seed treatment, 17 Mar

Harvest Date/Area: 1 Aug/201.25 ft^2 - 8.75 (15 rows) x 23 ft

SOUTH UNIT GENERAL METHODOLOGY

First (Main) Crop

Location: Rice Research Station, Crowley, LA (South Unit, Field 7B)

Seeding Method/Depth/Rate: Drilled on 7-inch rows/3 inches/90 lb/A

Fertilizer: 8-24-24 with 3.5% Zn and 2% S at 250 lb/A by tractor-mounted spreader, 4 Apr
Urea (46% N) at 200 lb/A by airplane, 3 May
Urea (46% N) at 100 lb/A by airplane, 3 June

Plot Size/Treated Area: 262.5 ft^2 – 8.75 (15 rows) x 30 ft

Seed Treater: Cement mixer

Sprayer: CO_2-driven, backpack, 35 psi, 15 GPA, 8001VS tips, 20-inch nozzle spacings

Planting Date: 5 Apr

Emergence: 15 Apr

Water Management: Flushed, 19 Apr; permanent flood (3-inch/rain), 6 May; pre-harvest drain, 22 July

Pertinent Rainfall: 0.3 inch, 6 Apr; 0.3 inch, 11 Apr; 0.3 inch, 3 Aug; 0.9 inch, 4 Aug

Growth Stage Definitions: Heading (HD), 50 to 75% of stems with some degree of panicle exsertion
Milk Stage (MS), endosperm is white liquid in uppermost florets
Dough Stage (DS), endosperm is white dough in uppermost florets
Physiological Maturity (PM), endosperm is hard/translucent in uppermost florets

Pesticide(s): Dithane DF (4 oz/cwt) seed treatment, 17 Mar
Icon (0.9 fl oz/A) seed treatment, 17 Mar
Stam (1 gal/A) + Permit (0.75 oz/A) by airplane, 21 Apr
Arrosolo (1 gal/A) by ATV, 3 May
Londax (2 oz/A) by airplane, 10 May
Karate (2 fl oz/A) by airplane, 10 May and 24 June
Quadris (12 fl oz/A) and Quadris (10 fl oz/A) by airplane, 1 and 20 July

Plant Growth Regulator(s): Release (0.35 oz/cwt) seed treatment, 17 Mar

Harvest Date/Area: 2 Aug/201.25 ft^2 – 8.75 (15 rows) x 23 ft

Second (Ratoon) Crop

Fertilizer: Urea (46% N) at 200 lb/A by airplane, 11 Aug

Water Management: Permanent flood (3-inch), 12 Aug; preharvest drain, 18 Oct

Pertinent Rainfall/Weather: See individual studies/Hurricane Katrina, 29 Aug; Hurricane Rita, 23 Sept

Harvest Date/Area: 31 Oct through 3 Nov/262.5 ft^2 – 8.75 (15 rows) x 30 ft

SOUTH UNIT (RED RICE) GENERAL METHODOLOGY

Location: Rice Research Station, Crowley, LA (South Unit, Field 11B)

Seeding Method/Depth/Rate: Drilled on 7-inch rows/2 inches/See individual studies

Fertilizer: 8-24-24 with 3.5% Zn and 2% S at 250 lb/A by tractor-mounted spreader, 13 Apr
Urea (46% N) at 240 lb/A by tractor-mounted spreader, 18 May

Plot Size/Treated Area: 262.5 ft^2 – 8.75 (15 rows) x 30 ft

Seed Treater: Cement mixer

Sprayer: CO_2-driven, backpack, 35 psi, 15 GPA, 8001VS tips, 20-inch nozzle spacings

Planting Date: 14 Apr

Emergence: 28 Apr

Water Management: Flushed, 20 and 29 Apr and 5 May
Permanent flood (3-inch rain), 20 May
Pre-harvest drain, 11 Aug

Pertinent Rainfall: See individual studies

Growth Stage Definitions: Preflood (PreFl), 2 to 4 days prior to permanent flood
Panicle Differentiation (PD), 2 mm panicle inside main culm
Milk Stage (MS), endosperm is white liquid in uppermost florets
Dough Stage (DS), endosperm is white dough in uppermost florets

Pesticide(s): Dithane DF (4 oz/cwt) seed treatment, 17 Mar
Icon (0.9 fl oz/A) seed treatment, 17 Mar
Stam (1 gal/A) + Permit (0.9 oz/A) + RyzUp (0.5 fl oz/A) by ATV, 16 May
Karate (2 fl oz/A) by airplane, 26 July

Plant Growth Regulator(s): Release (0.35 oz/cwt) seed treatment, 17 Mar

Harvest Date/Area: 24 Aug/201.25 ft^2 - 8.75 (15 rows) x 21 ft

SEEDLING VIGOR STUDIES – SEED AND FOLIAR TREATMENT

R.T. Dunand and R.R. Dilly, Jr.

Experiment: Gibberellic Acid and Seedling Vigor in Drill-Seeded Rice – March Planting Date

Location: Rice Research Station, Crowley, LA (North Unit, Field N8)

Variety: See Treatments

Planting Method: Drilled on 7-inch rows

Planting Depth: 2-inch

Seeding Rate: 90 lb/A

Fertilizer: None

Plot Size: 11.6 ft^2 – 0.58 (1 row) x 20 ft

Treated Area: 11.6 ft^2 – 0.58 (1 row) x 20 ft

Treatment(s): **Varieties/Experimental Lines**

Banks	Cybonnet	Francis	Pirogue	XP721
Bengal	CL131	Hidalgo	Sabine	XP729
Cala	CL161	Jefferson	Spring	RU4055
Cheniere	Ecrevisse	Jupiter	Trenasse	TX9092
Cocodrie				

CL – imidazolinone (Clearfield)-resistant lines

Plant Growth Regulators

Seed Treatment - GibGro (0.17 oz/cwt) and Release (0.35 oz/cwt)
Foliar Treatment - GibGro 4LS and Ryzup (1.5 fl oz/A)

Timing

Seed treatment, 17 Mar
Foliar treatment (3- to 4-leaf stage), 28 Apr

Seed Treater: Jar mill tumble mixer

Sprayer: CO_2-driven, backpack, 28 psi, 15 GPA, 8002LD tips, 20-inch nozzle spacings

Planting Date: 29 Mar

Emergence: See Treatments

Water Management: None

Pertinent Rainfall: 0.2 inch, 2 Mar; 0.4 inch, 7 Mar; 0.9 inch, 15 Mar; 0.2 inch, 16 Mar; 0.4 inch, 20 Mar; 0.1 inch, 28 Mar; 0.1 inch, 30 Mar; 0.2 inch, 6 Apr; 0.3 inch, 11 Apr; 0.7 inch, 25 Apr

Herbicide(s): Stam M4 (3 qt/A), 28 Apr (tank mixed with foliar PGRs)

Insecticide(s): Icon (0.9 fl oz/cwt) seed treatment, 17 Mar

Fungicide(s): Dithane DF (4 oz/cwt) seed treatment, 17 Mar

Plant Growth Regulator(s): See Treatments

Harvest Date: Not applicable

Harvested Area: Not applicable

Experimental Design: Randomized complete block design and four replications. Factorial treatment arrangement was as follows. A given plot contained a different variety or experimental line in each row. The position of a variety or experimental line within a given plot was constant. Each given plot was planted in triplicate in each replicate. Each given plot contained seven rows in accommodating 19 varieties and two experimental lines. Of each triplicate, one plot had untreated seed (no gibberellic acid) and the other two plots had seed treated with GibGro or Release according to the randomization of plots.

Comments: **Seedling Vigor-Emergence and Plant Population Density (Stand)**

Germplasm (varieties/experimental lines) and seed treatment with gibberellic acid had a significant effect on emergence of rice (Table 1). Time to stand, an evaluation of emergence, was the number of days from planting to establishment of an adequate stand (10 plants/ft^2). Germplasm on average had slow emergence with a time to stand of 23 to 29 days after planting (DAP). The evaluation period was 29 days. Any germplasm that had not obtained an adequate stand by 29 DAP was assigned a time of 29 DAP. This germplasm was considered unable to reach an adequate stand under the experimental conditions that existed. Germplasm separated into primarily two categories according to time to stand. The earlier emerging category represented by one variety, CL 131, had a time to stand of 23 DAP. The later emerging category had times to stand of 27 to 29 DAP and included the remainder of the germplasm entries. On average, across all germplasm, time to stand without a gibberellic acid seed treatment occurred 29 DAP, and seed treatment with GibGro and Release resulted in an average time to stand of 28 DAP. Bengal, CL131, and Spring were the most responsive germplasm and had earlier emergence of 5, 9, and 4 days, respectively, with gibberellic acid seed treatments (Table 2). The remainder of the germplasm exhibited no response (< 1 day earlier emergence).

Germplasm (varieties/experimental lines) and seed treatment with gibberellic acid had a significant effect on stand (Table 1). Final stand was measured as number of viable (green) 1-leaf stage or older plants at 29 DAP. Germplasm on average exhibited poor seedling vigor with final stands of 3 to 9 plants/ft^2 and separated into primarily two categories according to final stand. The least vigorous category had stands of 3 to 6 plants/ft^2 and included Cala and Hidalgo (3 plants/ft^2); XP721 and RU4055 (4 plants/ft^2); Cheniere, Ecrevisse, Francis, Jupiter, Pirogue, and Trenasse (5 plants/ft^2); and Banks, Cybonnet, Jefferson, Sabine, XP729, and TX9092 (6 plants/ft^2). The most vigorous category contained had stands of 7 to 9 plants/ft^2 and included Bengal, Cocodrie, and CL161 (7 plants/ft^2); Spring (8 plants/ft^2); and CL131 (9 plants/ft^2). On average, across germplasm, final stand without gibberellic acid seed treatment was 6 plants/ft^2 compared with 6 plants/ft^2 for seed treatment with GibGro and Release (Table 1). No germplasm had an adequate stand without gibberellic acid seed treatment and CL131 was the only germplasm with an adequate stand with gibberellic acid seed treatment (12 plants/ft^2). There were no interactions between germplasm and seed treatment with gibberellic acid (Table 2).

The inadequate levels of seedling vigor noted almost across the board were related in large measure to seedbed preparation. The area had been used for ratoon crop experiments the preceding year. Consequently, it was not plowed during the preceding fall and limited spring land preparation left a very rough seedbed with large clods of

soil. Environmental conditions were favorable, with little rain to cause the soil surface to seal and with mild temperatures. Following planting and during the evaluation period for emergence and stand (29 Mar - 27 Apr), daily average soil temperatures averaged 70ºF and ranged between 64 and 78ºF, and daily average air temperatures averaged 66ºF and ranged between 61 and 75ºF.

Seedling Vigor – Seedling Stature

Germplasm (varieties/experimental lines) and foliar treatment with gibberellic acid had a significant effect on seedling height (Table 3). On average, the shortest germplasm was Jefferson (15 cm), and the tallest was Cybonnet (19 cm). The other germplasm ranged in height from 16 to 18 cm. Overspraying each plot with gibberellic acid at the 3- to 4-leaf stage resulted in a significant increase in seedling height (Table 3), and the effect was relatively constant across germplasm (Table 4). The average increase in seedling height (distance from the soil surface to the tip of the longest leaf extended vertically) at 7 days after treatment (DAT) with GibGro 4LS and RyzUp was 4 cm (2 inches). There was no difference in plant response between the formulations of gibberellic acid (18 vs 18 cm average height with RyzUp and GibGro, respectively).

Daily average air temperature for the 7-day period following foliar application of gibberellic acid averaged 66ºF and ranged between 62 and 74ºF. The recommended rate of foliar gibberellic acid at those temperatures is 1 to 3 fl oz/A, and the rate of 1.5 fl oz/A was used based on weather forecasts at the time.

Table 1. The main effects of germplasm and plant growth regulator seed treatment on seedling vigor of rice drill seeded in March. Rice Research Station Crowley, LA. 2005.

Treatment Name	Fm Ds	Rate	Grow Stg	Time to Stand (days)	Final Stand (plants/ sq ft) 29 DAP
TABLE OF GERMPLASM MEANS					
Banks				29	6 cd
Bengal				27	7 bc
Cala				29	3 f
Cheniere				29	5 de
Cocodrie				29	7 bc
Cybonnet				29	6 cd
CL131				23	9 a
CL161				27	7 bc
Ecrevisse				29	5 de
Francis				29	5 de
Hidalgo				29	3 f
Jefferson				29	6 cd
Jupiter				29	5 de
Pirogue				29	5 de
Sabine				29	6 cd
Spring				27	8 ab
Trenasse				29	5 de
XP721				29	4 ef
XP729				29	6 cd
RU4055				29	4 ef
TX9092				29	6 cd
TABLE OF PLANT GROWTH REGULATOR MEANS					
Control				29	5 a
GibGro	sp	0.35	seed	28	6 b
Release	sp	0.35	seed	28	6 b

Within the same table, means followed by the same letter do not differ significantly (Duncan's multiple range test, P=.05).

Table 2. The simple effects of germplasm and plant growth regulator seed treatment on seedling vigor of rice drill seeded in March. Rice Research Station Crowley, LA. 2005.

Treatment Name	Fm Ds	Rate	Grow Stg	Time to Stand (days)	Final Stand (plants/ sq ft) 29 DAP
Banks Control				29a	5f-m
Banks GibGro	sp	0.35	seed	29a	7c-i
Banks Release	sp	0.35	seed	29a	6c-k
Bengal Control				29a	7c-i
Bengal GibGro	sp	0.35	seed	29a	6c-k
Bengal Release	sp	0.35	seed	24c	8b-e
Cala Control				29a	2no
Cala GibGro	sp	0.35	seed	29a	3mno
Cala Release	sp	0.35	seed	29a	4j-o
Cheniere Control				29a	4i-o
Cheniere GibGro	sp	0.35	seed	29a	6e-l
Cheniere Release	sp	0.35	seed	29a	6d-l
Cocodrie Control				29a	6c-k
Cocodrie GibGro	sp	0.35	seed	29a	6e-l
Cocodrie Release	sp	0.35	seed	29a	8b-e
Cybonnet Control				29a	5g-o
Cybonnet GibGro	sp	0.35	seed	29a	6e-l
Cybonnet Release	sp	0.35	seed	29a	7c-i
CL131 Control				29a	6c-k
CL131 GibGro	sp	0.35	seed	20d	9b

Continued.

Table 2. Continued.

Treatment Name	Fm Ds	Rate	Grow Stg	Time to Stand (days)	Final Stand (plants/ sq ft) 29 DAP
CL131 Release	sp	0.35	seed	20d	12a
CL161 Control				26abc	7b-g
CL161 GibGro	sp	0.35	seed	26abc	7b-f
CL161 Release	sp	0.35	seed	29a	7c-i
Ecrevisse Control				29a	4j-o
Ecrevisse GibGro	sp	0.35	seed	29a	6d-l
Ecrevisse Release	sp	0.35	seed	29a	5f-n
Francis Control				29a	4j-o
Francis GibGro	sp	0.35	seed	29a	5f-m
Francis Release	sp	0.35	seed	29a	6e-l
Hidalgo Control				29a	2o
Hidalgo GibGro	sp	0.35	seed	29a	3l-o
Hidalgo Release	sp	0.35	seed	29a	4k-o
Jefferson Control				29a	4k-o
Jefferson GibGro	sp	0.35	seed	29a	7c-i
Jefferson Release	sp	0.35	seed	29a	7c-i
Jupiter Control				29a	4j-o
Jupiter GibGro	sp	0.35	seed	29a	6d-l
Jupiter Release	sp	0.35	seed	29a	6c-j
Pirogue Control				29a	4h-o
Pirogue GibGro	sp	0.35	seed	29a	6e-l

Continued.

Table 2. Continued.

Treatment Name	Fm Ds	Rate	Grow Stg	Time to Stand (days)	Final Stand (plants/ sq ft) 29 DAP
Pirogue Release	sp	0.35	seed	29a	4h-o
Sabine Control				29a	5f-n
Sabine GibGro	sp	0.35	seed	29a	6e-l
Sabine Release	sp	0.35	seed	29a	7c-h
Spring Control				29a	7c-h
Spring GibGro	sp	0.35	seed	25bc	8bcd
Spring Release	sp	0.35	seed	27ab	9bc
Trenasse Control				29a	4h-o
Trenasse GibGro	sp	0.35	seed	29a	6d-l
Trenasse Release	sp	0.35	seed	29a	5f-m
XP721 Control				29a	3l-o
XP721 GibGro	sp	0.35	seed	29a	4h-o
XP721 Release	sp	0.35	seed	29a	5f-m
XP729 Control				29a	5f-n
XP729 GibGro	sp	0.35	seed	29a	6c-k
XP729 Release	sp	0.35	seed	29a	6d-l
RU4055 Control				29a	4k-o
RU4055 GibGro	sp	0.35	seed	29a	5f-m
RU4055 Release	sp	0.35	seed	29a	4h-o
TX9092 Control				29a	6e-l
TX9092 GibGro	sp	0.35	seed	29a	7b-f

Continued.

Table 2. Continued.

Treatment Name	Fm Ds	Rate	Grow Stg	Time to Stand (days)	Final Stand (plants/ sq ft) 29 DAP
TX9092 Release	sp	0.35	seed	29a	6c-j
LSD (.05)	=			3	2
Standard Dev.	=			1.8281	1.4563
CV	=			6.43	26.52

Means followed by same letter do not significantly differ (Duncan's multiple range test, P=.05).

Table 3. The main effect of germplasm and plant growth regulator foliar treatment on seedling stature of rice drill seeded in March. Rice Research Station, Crowley, LA. 2005.

Treatment Name	Fm Ds	Rate	Grow Stg	Pl. Ht. (cm) 7 DAT
TABLE OF GERMPLASM MEANS				
Banks				16 cd
Bengal				18 ab
Cala				17 bc
Cheniere				16 cd
Cocodire				17 bc
Cybonnet				19 a
CL131				17 bc
CL161				17 bc
Ecrevisse				17 bc
Francis				18 ab
Hidalgo				16 cd
Jefferson				15 d
Jupiter				16 cd
Pirogue				16 cd
Sabine				18 ab
Spring				17 bc
Trenasse				17 bc
XP721				17 bc
XP729				17 bc
RU4055				16 cd
TX9092				17 bc
TABLE OF PLANT GROWTH REGULATOR MEANS				
Control				14 a
Gibro 4LS		1.5	3-4lf	18 b
RyzUp		1.5	3-4lf	18 b

Within the same table, means followed by the same letter do not differ significantly (Duncan’s multiple range test, P=.05).

Table 4. The simple effect of germplasm and plant growth regulator foliar treatment on seedling stature of rice drill seeded in March. Rice Research Station, Crowley, LA. 2005.

Treatment Name	Fm Ds	Rate	Grow Stg	Pl. Ht. (cm) 7 DAT
Banks Control				13rst
Banks Gibro 4LS		1.5	3-4lf	18b-j
Banks RyzUp		1.5	3-4lf	17f-n
Bengal Control				15l-t
Bengal Gibro 4LS		1.5	3-4lf	19a-f
Bengal RyzUp		1.5	3-4lf	19a-g
Cala Control				14n-t
Cala Gibro 4LS		1.5	3-4lf	20a-e
Cala RyzUp		1.5	3-4lf	18b-i
Cheniere Control				14o-t
Cheniere Gibro 4LS		1.5	3-4lf	18b-j
Cheniere RyzUp		1.5	3-4lf	17f-n
Cocodire Control				13rst
Cocodire Gibro 4LS		1.5	3-4lf	19b-i
Cocodire RyzUp		1.5	3-4lf	19b-i
Cybonnet Control				16i-r
Cybonnet Gibro 4LS		1.5	3-4lf	20abc
Cybonnet RyzUp		1.5	3-4lf	22a
CL131 Control				14m-t
CL131 Gibro 4LS		1.5	3-4lf	20a-d

Continued.

Table 4. Continued.

Treatment Name	Fm Ds	Rate	Grow Stg	Pl. Ht. (cm) 7 DAT
CL131 RyzUp		1.5	3-4lf	18c-k
CL161 Control				13st
CL161 Gibro 4LS		1.5	3-4lf	21ab
CL161 RyzUp		1.5	3-4lf	18b-j
Ecrevisse Control				14n-t
Ecrevisse Gibro 4LS		1.5	3-4lf	17e-m
Ecrevisse RyzUp		1.5	3-4lf	19a-h
Francis Control				14m-t
Francis Gibro 4LS		1.5	3-4lf	19a-g
Francis RyzUp		1.5	3-4lf	19a-f
Hidalgo Control				13rst
Hidalgo Gibro 4LS		1.5	3-4lf	18b-i
Hidalgo RyzUp		1.5	3-4lf	17e-m
Jefferson Control				12t
Jefferson Gibro 4LS		1.5	3-4lf	15j-s
Jefferson RyzUp		1.5	3-4lf	16g-p
Jupiter Control				13st
Jupiter Gibro 4LS		1.5	3-4lf	18b-j
Jupiter RyzUp		1.5	3-4lf	17f-n
Pirogue Control				13rst
Pirogue Gibro 4LS		1.5	3-4lf	18c-k

Continued.

Table 4. Continued.

Treatment Name	Fm Ds	Rate	Grow Stg	Pl. Ht. (cm) 7 DAT
Pirogue				16h-q
RyzUp		1.5	3-4lf	
Sabine				15k-t
Control				
Sabine				20a-d
Gibro 4LS		1.5	3-4lf	
Sabine				19a-f
RyzUp		1.5	3-4lf	
Spring				13q-t
Control				
Spring				18b-j
Gibro 4LS		1.5	3-4lf	
Spring				19a-g
RyzUp		1.5	3-4lf	
Trenasse				14p-t
Control				
Trenasse				19a-g
Gibro 4LS		1.5	3-4lf	
Trenasse				19a-h
RyzUp		1.5	3-4lf	
XP721				13q-t
Control				
XP721				18b-j
Gibro 4LS		1.5	3-4lf	
XP721				19b-i
RyzUp		1.5	3-4lf	
XP729				15l-t
Control				
XP729				17d-l
Gibro 4LS		1.5	3-4lf	
XP729				18b-j
RyzUp		1.5	3-4lf	
RU4055				14p-t
Control				
RU4055				17f-o
Gibro 4LS		1.5	3-4lf	
RU4055				18b-j
RyzUp		1.5	3-4lf	
TX9092				14m-t
Control				
TX9092				19b-i
Gibro 4LS		1.5	3-4lf	

Continued.

Table 4. Continued.

Treatment Name	Fm Ds	Rate	Grow Stg	Pl. Ht. (cm) 7 DAT
TX9092				18b-i
RyzUp		1.5	3-4lf	
LSD (.05)	=			2
Standard Dev.	=			1.6882
CV	=			10.11

Means followed by same letter do not significantly differ (Duncan's multiple range test, P=.05).

SEEDLING VIGOR STUDIES – SEED AND FOLIAR TREATMENT

R.T. Dunand and R.R. Dilly, Jr.

Experiment: Gibberellic Acid and Seedling Vigor in Drill-Seeded Rice – April Planting Date

Location: Rice Research Station, Crowley, LA (North Unit, Field N9-A)

Variety: See Treatments

Planting Method: Drilled on 7-inch rows

Planting Depth: 3-inch

Seeding Rate: 90 lb/A

Fertilizer: None

Plot Size: 11.6 ft^2 – 0.58 (1 row) x 20 ft

Treated Area: 11.6 ft^2 – 0.58 (1 row) x 20 ft

Treatment(s): **Varieties/Experimental Lines**

Banks	Cybonnet	Francis	Pirogue	XP721
Bengal	CL131	Hidalgo	Sabine	XP729
Cala	CL161	Jefferson	Spring	RU4055
Cheniere	Ecrevisse	Jupiter	Trenasse	TX9092
Cocodrie				

CL – imidazolinone (Clearfield)-resistant lines

Plant Growth Regulators

Seed Treatment - GibGro (0.17 oz/cwt) and Release (0.35 oz/cwt)
Foliar Treatment - GibGro 4LS and Ryzup (1 fl oz/A)

Timing

Seed treatment, 17 Mar
Foliar treatment (3- to 4-leaf stage), 12 May

Seed Treater: Jar mill tumble mixer

Sprayer: CO_2-driven, backpack, 28 psi, 15 GPA, 8002LD tips, 20-inch nozzle spacings

Planting Date: 14 Apr

Emergence: See Treatments

Water Management: None

Pertinent Rainfall: 0.2 inch, 6 Apr; 0.3 inch, 11 Apr; 0.7 inch, 25 Apr; 1.5 inches, 29 Apr; 0.3 inch, 30 Apr; 0.2 inch, 8 May

Herbicide(s): Stam M4 (3 qt/A), 12 May (tank mixed with foliar PGRs)

Insecticide(s): Icon (0.9 fl oz/cwt) seed treatment, 17 Mar

Fungicide(s): Dithane DF (4 oz/cwt) seed treatment, 17 Mar

Plant Growth Regulator(s): See Treatments

Harvest Date: Not applicable

Harvested Area: Not applicable

Experimental Design: Randomized complete block design and four replications. Factorial treatment arrangement was as follows. A given plot contained a different variety or experimental line in each row. The position of a variety or experimental line within a given plot was constant. Each given plot was planted in triplicate in each replicate. Each given plot contained seven rows in accommodating 19 varieties and two experimental lines. Of each triplicate, one plot had untreated seed (no gibberellic acid) and the other two plots had seed treated with GibGro or Release according to the randomization of plots.

Comments: **Seedling Vigor-Emergence and Plant Population Density (Stand)**

Germplasm (varieties/experimental lines) and seed treatment with gibberellic acid had a significant effect on emergence of rice (Table 1). Time to stand, an evaluation of emergence, was the number of days from planting to establishment of an adequate stand (10 plants/ft^2). Germplasm on average had a time to stand of 10 to 27 days after planting (DAP). The evaluation period was 27 days. Any germplasm that had not obtained an adequate stand by 27 days was assigned a time of 27 days. This germplasm was considered unable to reach an adequate stand under the experimental conditions that existed. Germplasm separated into primarily three categories according to time to stand. The earlier emerging category had times to stand of 10 to 13 DAP and included Cocodrie, CL131, and Spring (10 DAP); Banks, CL161, and Sabine (11 DAP); Jefferson and XP729 (12 DAP); and Cybonnet and Jupiter (13 DAP). The intermediate emerging category had times to stand of 14 to 19 DAP and included Cheniere and TX9092 (14 DAP), Bengal and XP721 (15 DAP), Francis and Trenasse (16 DAP), Ecrevisse (17 DAP), and RU4055 (19 DAP). The later emerging category had times to stand of 21 to 27 DAP and included Pirogue (21 DAP), Hidalgo (25 DAP), and Cala (27 DAP). On average, across germplasm, time to stand without a gibberellic acid seed treatment occurred 17 DAP, and seed treatment with gibberellic acid reduced time to stand to 14 DAP, regardless of formulation. All germplasm responded relatively the same to seed treatment with gibberellic acid (Table 2).

Germplasm (varieties/experimental lines) and seed treatment with gibberellic acid had a significant effect on stand (Table 1). Final stand was measured as number of viable (green) 1-leaf stage or older plants at 27 DAP. Germplasm on average had final stands of 6 to 18 plants/ft^2 and separated into primarily three categories according to final stand. The least vigorous category had stands of 6 to 9 plants/ft^2 and included Cala (6 plants/ft^2), Hidalgo (7 plants/ft^2), and Pirogue (9 plants/ft^2). The category with intermediate vigor had stands of 10 to 15 plants/ft^2 and included Ecrevisse and RU4055 (10 plants/ft^2); Francis (11 plants/ft^2); Bengal, Cheniere, Cybonnet, Trenasse, and XP721 (12 plants/ft^2); Jupiter and TX9092 (13 plants/ft^2); Banks, CL161, Jefferson, Sabine, and XP729 (14 plants/ft^2); and Cocodrie (15 plants/ft^2). The most vigorous category contained two varieties with stands of 18 plants/ft^2. These were CL131 and Spring. On average, across germplasm, final stand without gibberellic acid seed treatment was 11 plants/ft^2 compared with 13 plants/ft^2 for seed treatment with either formulation of gibberellic acid (Table 1). Response to gibberellic acid was consistent across germplasm. Cala (5 plants/ft^2), Ecrevisse (9 plants/ft^2), Hidalgo (6 plants/ft^2), and Pirogue and RU4055 (9 plants/ft^2) had inadequate stands (less than 10 plants/ft^2) without seed treatment with gibberellic acid. Cala (7 plants/ft^2), Hidalgo (7 plants/ft^2), and Pirogue (9 plants/ft^2) had inadequate stands with seed treatment with gibberellic acid.

Adequate levels of seedling vigor associated with rate of emergence and seedling population were related in part to the favorable environmental conditions following planting. Following planting and during the evaluation period for emergence and stand (15 Apr – 11 May), daily average soil temperatures averaged 73ºF and ranged between 68 and 81ºF, and daily average air temperatures averaged 66ºF and ranged between 61 and 78ºF.

Seedling Vigor – Seedling Stature

Germplasm (varieties/experimental lines) and foliar treatment with gibberellic acid had a significant effect on seedling height (Table 3). On average, the germplasm ranged in height from 23 to 27 cm. Over spraying each plot with gibberellic acid at the 3- to 4-leaf stage resulted in a significant increase in seedling height (Table 3), and the effect was relatively constant across germplasm (Table 4). The average increase in seedling height (distance from the soil surface to the tip of the longest leaf extended vertically) at 7 days after treatment (DAT) with GibGro 4LS and RyzUp was 10 cm (5 inches). There was no difference in plant response between the formulations of gibberellic acid (28 vs 28 cm average height with RyzUp and GibGro, respectively).

Daily average air temperature for the 7-day period following foliar application of gibberellic acid averaged 75ºF and ranged between 72 and 78ºF. The recommended rate of foliar gibberellic acid at those temperatures is 0.5 to 1.5 fl oz/A, and the rate of 1 fl oz/A was used based on weather forecasts at the time.

Table 1. The main effects of germplasm and plant growth regulator seed treatment on seedling vigor of rice drill seeded in April. Rice Research Station, Crowley, LA. 2005.

Treatment Name	Fm Ds Rate	Grow Stg	Time to Stand (days)	Stand (plants/ sq ft) 27 DAP
TABLE OF GERMPLASM MEANS				
Banks			11 hi	14 bc
Bengal			15 def	12 de
Cala			27 a	6 h
Cheniere			14 efg	12 de
Cocodrie			10 i	15 b
Cybonnet			13 fgh	12 de
CL131			10 i	18 a
CL161			11 hi	14 bc
Ecrevisse			17 cd	10 fg
Francis			16 de	11 ef
Hidalgo			25 a	7 h
Jefferson			12 ghi	14 bc
Jupiter			13 fgh	13 c
Pirogue			21 b	9 g
Sabine			11 hi	14 bc
Spring			10 i	18 a
Trenasse			16 de	12 de
XP721			15 def	12 de
XP729			12 gh	14 bc
RU4055			19 bc	10 fg
TX9092			14 efg	13 cd
TABLE OF PLANT GROWTH REGULATOR MEANS				
Control			17 a	11 a
GibGro	sp 0.35	seed	14 b	13 b
Release	sp 0.35	seed	14 b	13 b

Within the same table, means followed by the same letter do not differ significantly (Duncan's multiple range test, P=.05).

Table 2. The simple effects of germplasm and plant growth regulator seed treatment on seedling vigor of rice drill seeded in April. Rice Research Station, Crowley, LA. 2005.

Treatment Name	Fm Ds	Rate	Grow Stg	Time to Stand (days)	Stand (plants/ sq ft) 27 DAP
Banks Control				11m-p	15c-h
Banks GibGro	sp	0.35	seed	10m-p	14d-k
Banks Release	sp	0.35	seed	12j-p	14d-j
Bengal Control				17e-m	12g-n
Bengal GibGro	sp	0.35	seed	15h-p	11i-o
Bengal Release	sp	0.35	seed	13i-p	14d-k
Cala Control				27a	5r
Cala GibGro	sp	0.35	seed	27a	7pqr
Cala Release	sp	0.35	seed	27a	6qr
Cheniere Control				18d-l	11i-o
Cheniere GibGro	sp	0.35	seed	13i-p	12h-n
Cheniere Release	sp	0.35	seed	13i-p	12g-n
Cocodrie Control				12l-p	14d-k
Cocodrie GibGro	sp	0.35	seed	10op	14d-k
Cocodrie Release	sp	0.35	seed	10m-p	16b-g
Cybonnet Control				16e-o	12h-n
Cybonnet GibGro	sp	0.35	seed	11m-p	13f-l
Cybonnet Release	sp	0.35	seed	12l-p	12h-n
CL131 Control				10m-p	17b-f
CL131 GibGro	sp	0.35	seed	11m-p	18abc

Continued.

Table 2. Continued.

Treatment Name	Fm Ds	Rate	Grow Stg	Time to Stand (days)	Stand (plants/ sq ft) 27 DAP
CL131 Release	sp	0.35	seed	10m-p	19ab
CL161 Control				11l-p	14d-j
CL161 GibGro	sp	0.35	seed	11m-p	14d-k
CL161 Release	sp	0.35	seed	10m-p	15c-i
Ecrevisse Control				20b-h	9n-q
Ecrevisse GibGro	sp	0.35	seed	15h-p	10k-p
Ecrevisse Release	sp	0.35	seed	16e-n	10k-p
Francis Control				18c-k	10l-q
Francis GibGro	sp	0.35	seed	15f-p	12g-n
Francis Release	sp	0.35	seed	15h-p	11i-o
Hidalgo Control				27a	6qr
Hidalgo GibGro	sp	0.35	seed	24abc	6qr
Hidalgo Release	sp	0.35	seed	25ab	8o-r
Jefferson Control				17e-m	13f-l
Jefferson GibGro	sp	0.35	seed	11m-p	14d-k
Jefferson Release	sp	0.35	seed	10nop	14e-k
Jupiter Control				12j-p	12h-n
Jupiter GibGro	sp	0.35	seed	14i-p	14d-k
Jupiter Release	sp	0.35	seed	15h-p	13f-m
Pirogue Control				22a-e	9n-q
Pirogue GibGro	sp	0.35	seed	21a-g	9n-q

Continued.

Table 2. Continued.

Treatment Name	Fm Ds	Rate	Grow Stg	Time to Stand (days)	Stand (plants/ sq ft) 27 DAP
Pirogue Release	sp	0.35	seed	21a-f	9m-q
Sabine Control				13i-p	13f-l
Sabine GibGro	sp	0.35	seed	11m-p	16b-g
Sabine Release	sp	0.35	seed	11m-p	13f-l
Spring Control				11l-p	17a-e
Spring GibGro	sp	0.35	seed	10nop	20a
Spring Release	sp	0.35	seed	9p	18a-d
Trenasse Control				20b-h	11j-p
Trenasse GibGro	sp	0.35	seed	14h-p	13f-m
Trenasse Release	sp	0.35	seed	15g-p	12h-n
XP721 Control				18c-j	12h-n
XP721 GibGro	sp	0.35	seed	13i-p	13f-m
XP721 Release	sp	0.35	seed	15f-p	12g-n
XP729 Control				14i-p	13f-l
XP729 GibGro	sp	0.35	seed	12k-p	15c-i
XP729 Release	sp	0.35	seed	12j-p	14d-k
RU4055 Control				24a-d	9n-q
RU4055 GibGro	sp	0.35	seed	19c-i	9m-q
RU4055 Release	sp	0.35	seed	15h-p	11i-o
TX9092 Control				20b-h	10k-p
TX9092 GibGro	sp	0.35	seed	11l-p	14d-k

Continued.

Table 2. Continued.

Treatment Name	Fm Ds	Rate	Grow Stg	Time to Stand (days)	Stand (plants/ sq ft) 27 DAP
TX9092				12k-p	14d-j
Release	sp	0.35	seed		
LSD (.05)	=			5	3
Standard Dev.	=			3.7396	2.2181
CV	=			24.94	18.10

Means followed by same letter do not significantly differ (Duncan's multiple range test, P=.05).

Table 3. The main effect of germplasm and plant growth regulator foliar treatment on seedling stature in rice drill seeded in April. Rice Research Station, Crowley, LA. 2005.

Treatment Name	Fm Ds	Rate	Grow Stg	Pl. Ht. (cm) shoot 7 DAT
TABLE OF GERMPLASM MEANS				
Banks				25 bc
Bengal				26 ab
Cala				23 d
Cheniere				23 d
Cocodire				25 bc
Cybonnet				25 bc
CL131				25 bc
CL161				24 cd
Ecrevisse				27 a
Francis				23 d
Hidalgo				23 d
Jefferson				26 ab
Jupiter				25 bc
Pirogue				25 bc
Sabine				25 bc
Spring				25 bc
Trenasse				27 a
XP721				23 d
XP7293				23 d
RU4055				25 b
TX9092				26 ab
TABLE OF PLANT GROWTH REGULATOR MEANS				
Control				18 a
Gibro 4LS		1.5	3-4lf	28 b
RyzUp		1.5	3-4lf	28 b

Within the same table, means followed by the same letter do not differ significantly (Duncan’s multiple range test, P=.05).

Table 4. The simple effect of germplasm and plant growth regulator foliar treatment on seedling stature in rice drill seeded in April. Rice Research Station, Crowley, LA. 2005.

Treatment Name	Fm Ds Rate	Grow Stg	Pl. Ht. (cm) shoot 7 DAT
Banks Control			18mn
Banks Gibro 4LS	1.5	3-4lf	28c-k
Banks RyzUp	1.5	3-4lf	30a-e
Bengal Control			19lmn
Bengal Gibro 4LS	1.5	3-4lf	31ab
Bengal RyzUp	1.5	3-4lf	29a-f
Cala Control			17n
Cala Gibro 4LS	1.5	3-4lf	27d-k
Cala RyzUp	1.5	3-4lf	25k
Cheniere Control			17n
Cheniere Gibro 4LS	1.5	3-4lf	26h-k
Cheniere RyzUp	1.5	3-4lf	26g-k
Cocodire Control			18mn
Cocodire Gibro 4LS	1.5	3-4lf	28a-k
Cocodire RyzUp	1.5	3-4lf	29a-i
Cybonnet Control			18mn
Cybonnet Gibro 4LS	1.5	3-4lf	28a-j

Continued.

Table 4. Continued.

Treatment Name	Fm Ds	Rate	Grow Stg	Pl. Ht. (cm) shoot 7 DAT
Cybonnet RyzUp		1.5	3-4lf	28b-k
CL131 Control				18mn
CL131 Gibro 4LS		1.5	3-4lf	29a-h
CL131 RyzUp		1.5	3-4lf	28a-j
CL161 Control				18mn
CL161 Gibro 4LS		1.5	3-4lf	28c-k
CL161 RyzUp		1.5	3-4lf	27d-k
Ecrevisse Control				20lm
Ecrevisse Gibro 4LS		1.5	3-4lf	31a
Ecrevisse RyzUp		1.5	3-4lf	29a-g
Francis Control				18mn
Francis Gibro 4LS		1.5	3-4lf	27f-k
Francis RyzUp		1.5	3-4lf	25k
Hidalgo Control				18mn
Hidalgo Gibro 4LS		1.5	3-4lf	26jk
Hidalgo RyzUp		1.5	3-4lf	26ijk
Jefferson Control				18mn
Jefferson Gibro 4LS		1.5	3-4lf	29a-g

Continued.

Table 4. Continued.

Treatment Name	Fm Ds	Rate	Grow Stg	Pl. Ht. (cm) shoot 7 DAT
Jefferson RyzUp		1.5	3-4lf	30a-d
Jupiter Control				17n
Jupiter Gibro 4LS		1.5	3-4lf	29a-i
Jupiter RyzUp		1.5	3-4lf	28a-j
Pirogue Control				17n
Pirogue Gibro 4LS		1.5	3-4lf	28b-k
Pirogue RyzUp		1.5	3-4lf	29a-h
Sabine Control				19lmn
Sabine Gibro 4LS		1.5	3-4lf	27e-k
Sabine RyzUp		1.5	3-4lf	30a-e
Spring Control				18mn
Spring Gibro 4LS		1.5	3-4lf	29a-h
Spring RyzUp		1.5	3-4lf	29a-h
Trenasse Control				21l
Trenasse Gibro 4LS		1.5	3-4lf	30abc
Trenasse RyzUp		1.5	3-4lf	30a-d
XP721 Control				17n
XP721 Gibro 4LS		1.5	3-4lf	27d-k

Continued.

Table 4. Continued.

Treatment Name	Fm Ds Rate	Grow Stg	Pl. Ht. (cm) shoot 7 DAT
XP721 RyzUp	1.5	3-4lf	25k
XP7293 Control			17n
XP7293 Gibro 4LS	1.5	3-4lf	26h-k
XP7293 RyzUp	1.5	3-4lf	25k
RU4055 Control			19mn
RU4055 Gibro 4LS	1.5	3-4lf	29a-g
RU4055 RyzUp	1.5	3-4lf	27d-k
TX9092 Control			19mn
TX9092 Gibro 4LS	1.5	3-4lf	28a-j
TX9092 RyzUp	1.5	3-4lf	30a-e
LSD (.05) =			2
Standard Dev. =			1.586
CV =			6.44

Means followed by same letter do not significantly differ (Duncan's multiple range test, P=.05).

YIELD ENHANCEMENT STUDIES – FIRST CROP

R.T. Dunand and R.R. Dilly, Jr.

Experiment: Prestige and Crop Production in Drill-Seeded Rice

General Methodology: See North Unit/General Methodology (pg. 283)

Variety: Cocodrie

Treatment(s):

Plant Growth Regulator
Prestige (4 and 8 fl oz/A)

Timing
Panicle Differentiation (PD), 8 June
Late Boot (LB), 17 June
Milk Stage (MS), 1 July
Dough Stage (DS), 8 July
PD+LB+MS+DS (4T)
LB+MS+DS (3T)
MS+DS (2T)

Pertinent Rainfall: No significant rain within 8 hr after foliar applications

Experimental Design: Randomized complete block and four replications.

Comments:

Crop Production

Crop stature, maturity, and production were evaluated at harvest, and none was significantly affected by the applications of Prestige (Table 1). Mature plant height (distance from the soil surface to the tip of the panicle extended vertically) ranged between 98 and 99 cm (control=98 cm). Grain moisture (an indicator of crop maturity) ranged between 18.4 and 19.0% (control = 18.6%). Grain yield (adjusted to 12% moisture) was highest (10499 lb/A) with the higher rate of Prestige compared with the control (10127 lb/A) and was generally low with multiple applications, ranging between 9839 and 10228 lb/A. The other Prestige treatments ranged between 10134 and 10315 lb/A.

Table 1. The effects of Prestige on crop production in drill-seeded rice. Rice Research Station, Crowley, LA. 2005.

Treatment Name	Fm Ds	Rate	Grow Stg	Pl. Ht. (cm)	Grain Moisture (%)	Grain Yield (lb/A)
Control				98a	18.6ab	10127abc
Prestige	l	4	PD	98a	18.6ab	10274abc
Prestige	l	8	PD	99a	19.0a	10315abc
Prestige	l	4	LB	99a	18.7ab	9939bc
Prestige	l	8	LB	99a	18.7ab	10148abc
Prestige	l	4	MS	99a	18.7ab	10174abc
Prestige	l	8	MS	98a	18.6ab	10381ab
Prestige	l	4	DS	99a	18.6ab	10264abc
Prestige	l	8	DS	99a	18.8ab	10499a
Prestige	l	4	4T	98a	18.9ab	10155abc
Prestige	l	8	4T	99a	18.4b	9839c
Prestige	l	4	3T	99a	18.5ab	10255abc
Prestige	l	8	3T	99a	18.7ab	10228abc
Prestige	l	4	2T	99a	18.8ab	10134abc
Prestige	l	8	2T	99a	18.6ab	9899bc
LSD (.05)	=			1	0.4	422
Standard Dev.	=			1.0472	.3094	295.52
CV	=			1.06	1.66	2.90

Means followed by same letter do not significantly differ (Duncan's multiple range test, P=.05).

YIELD ENHANCEMENT STUDIES – FIRST CROP

R.T. Dunand and R.R. Dilly, Jr.

Experiment: Late-Season Experimental Plant Growth Regulators and Crop Production in Drill-Seeded Rice

General Methodology: See North Unit/General Methodology (pg. 283)

Variety: Cheniere

Treatment(s): **Plant Growth Regulator**
AgCtr-PGR-101, 102, 103, and 104

Timing
Late Boot (LB), 17 June
Heading (HD), 23 June
Milk Stage (MS), 5 July
Dough Stage (DS), 11 July

Pertinent Rainfall: No significant rain within 8 hr after foliar applications

Experimental Design: Randomized complete block and four replications.

Comments:

Plant Growth and Development

The application of late-season experimental plant growth regulators at late boot had a temporary influence on plant stature (Table 1). At 7 days after treatment (DAT), plant height (distance from the soil surface to the tip of the longest leaf extended vertically) ranged between 101 and 110 cm for the late-boot treatments compared with a range between 97 and 98 cm for the control and remaining treatments, which had not been imposed at that time.

Crop Production

Crop stature, maturity, and production were evaluated at harvest, and none was significantly affected by the applications of the experimental plant growth regulators (Table 1). Mature plant height (distance from the soil surface to the tip of the panicle extended vertically) ranged between 101 and 103 cm (control=101 cm). Grain moisture (an indicator of crop maturity) ranged between 19.5 and 20.6% (control = 19.9%). Grain yield (adjusted to 12% moisture) was highest (10482 lb/A) with AgCtr-PGR-101 applied at dough stage, and in general, the remaining treatments decreased yield (9754 to 10409 lb/A) compared with the control (10437 lb/A).

Table 1. The effects of late-season experimental plant growth regulators on crop development and production in drill-seeded rice. Rice Research Station, Crowley, LA. 2005.

Treatment Name	Fm Ds Rate	Grow Stg	Pl. Ht. (cm) LB+6 DAT	Pl. Ht. (cm)	Grain Moisture (%)	Grain Yield (lb/A)
Control			97d	101ab	19.9abc	10437a
AgCtr-PGR-101		LB	101c	101ab	19.5c	9960ab
AgCtr-PGR-102		LB	104b	102ab	19.5c	9754b
AgCtr-PGR-103		LB	109a	102ab	19.9abc	10010ab
AgCtr-PGR-104		LB	110a	103a	19.7c	9891ab
AgCtr-PGR-101		HD	98d	101ab	19.7c	10409a
AgCtr-PGR-102		HD	98d	103a	20.6ab	10330ab
AgCtr-PGR-103		HD	97d	103a	19.8abc	10310ab
AgCtr-PGR-104		HD	97d	103a	20.1abc	10394a
AgCtr-PGR-101		MS	97d	101ab	19.9abc	9988ab
AgCtr-PGR-102		MS	98d	102ab	19.9abc	10150ab
AgCtr-PGR-103		MS	97d	101b	20.1abc	10045ab
AgCtr-PGR-104		MS	98d	101ab	20.2abc	10049ab
AgCtr-PGR-101		DS	97d	101ab	19.8bc	10482a
AgCtr-PGR-102		DS	97d	101ab	20.2abc	10161ab
AgCtr-PGR-103		DS	97d	101ab	20.6a	10061ab
AgCtr-PGR-104		DS	98d	102ab	20.3abc	10011ab
LSD (.05)	=		1	2	0.7	511
Standard Dev.	=		1.0133	1.2129	.49457	357.78
CV	=		1.02	1.19	2.47	3.53

Means followed by same letter do not significantly differ (Duncan's multiple range test, P=.05).

YIELD ENHANCEMENT STUDIES – FIRST CROP

R.T. Dunand and R.R. Dilly, Jr.

Experiment: Midseason Experimental Plant Growth Regulators and Crop Development and Production in Drill-Seeded Rice

General Methodology: See North Unit/General Methodology (pg. 283)

Variety: Cheniere

Treatment(s): **Plant Growth Regulator**
AgCtr-PGR-09, 09a, 09g

Timing
Panicle Differentiation (PD), 10 June
Early Boot (EB), 14 June
Late Boot (LB), 17 June
Heading (HD), 23 June

Pertinent Rainfall: No significant rain within 8 hr after foliar applications

Experimental Design: Randomized complete block and four replications.

Comments:

Plant Growth and Development

The application of midseason experimental plant growth regulators at PD, EB, and LB had a temporary influence on plant stature (Table 1). At approximately 7 days after treatment (DAT) following the PD treatments, plant height (distance from the soil surface to the tip of the longest leaf extended vertically) ranged between 97 and 101 cm for the PD and EB treatments of AgCtr-PGR-09 and AgCtr-PGR-09g. For the control and other treatments, plant height ranged between 90 and 92 cm. At the time, the EB treatments were 3 DAT and the LB and HD treatments had not been imposed. At 7 DAT following the EB treatments, plant height ranged between 100 and 105 cm for the PD, EB, and LB treatments of AgCtr-PGR-09 and AgCtr-PGR-09g. For the control and other treatments, plant height ranged between 95 and 97 cm. At the time, the PD treatments were 11 DAT and the HD treatments had not been imposed. At 6 DAT following the LB treatments, plant height ranged between 103 and 108 cm for the PD, EB, and LB treatments of AgCtr-PGR-09 and AgCtr-PGR09g. For the control and other treatments, plant height ranged between 98 and 100 cm. At the time, the PD treatments were 13 DAT, the EB treatments were 9 DAT, and the HD treatments had not been imposed.

Crop Production

Crop stature, maturity, and production were evaluated at harvest, and none was significantly affected by the applications of experimental plant growth regulators (Table 1). Mature plant height (distance from the soil surface to the tip of the panicle extended vertically) ranged between 101 and 103 cm (control = 102 cm). Grain moisture (an indicator of crop maturity) ranged between 19.6 and 20.5% (control = 20.2%). Grain yield (adjusted to 12% moisture) was highest (10668 lb/A) with AgCtr-PGR-09g applied at early boot, and in general, the remaining treatments had yields (10134 to 10546 lb/A) comparable with the control (10526 lb/A).

Table 1. The effects of midseason experimental plant growth regulators on crop development and production in drill-seeded rice. Rice Research Station, Crowley, LA. 2005.

Treatment Name	Fm Ds Rate	Grow Stg	Pl. Ht. (cm) PD+7	Pl. Ht. (cm) EB+7	Pl. Ht. (cm) LB+6	Pl. Ht. (cm)	Grain Moisture (%)	Grain Yield (lb/A)
Control			92c	97d	99d	102ab	20.2abc	10526a
AgCtr-PGR-09		PD	99ab	103b	105b	102ab	19.8bc	10403a
AgCtr-PGR-09a		PD	90c	96d	99d	102ab	20.2abc	10436a
AgCtr-PGR-09g		PD	97b	100c	103c	102ab	20.3abc	10336a
AgCtr-PGR-09		EB	100a	105ab	107ab	103ab	20.5ab	10448a
AgCtr-PGR-09a		EB	92c	95d	98d	102ab	20.1abc	10546a
AgCtr-PGR-09g		EB	101a	105a	108a	103ab	19.7c	10668a
AgCtr-PGR-09		LB	90c	104ab	105bc	102ab	20.5a	10134a
AgCtr-PGR-09a		LB	90c	97d	98d	101b	20.3abc	10313a
AgCtr-PGR-09g		LB	91c	104ab	106ab	102ab	20.0abc	10571a
AgCtr-PGR-09		HD	90c	97d	100d	103a	20.3abc	10198a
AgCtr-PGR-09a		HD	90c	97d	99d	102ab	19.6c	10276a
AgCtr-PGR-09g		HD	92c	97d	99d	103ab	19.7c	10316a
LSD (.05)	=		3	2	2	2	0.6	583
Standard Dev.	=		2.1089	1.2463	1.3579	1.226	.44354	403.75
CV	=		2.26	1.25	1.33	1.20	2.21	3.88

Means followed by same letter do not significantly differ (Duncan's multiple range test, P=.05).

YIELD ENHANCEMENT STUDIES – FIRST CROP

R.T. Dunand and R.R. Dilly, Jr.

Experiment: Auxin and Gibberellin Applied at the Beginning of Stem Internode Elongation, Crop Development, and Production in Drill-Seeded Rice

General Methodology: See North Unit/General Methodology (pg. 283)

Variety: Cheniere

Treatment(s): **Plant Growth Regulator** (with Agri Dex, 1 qt/A)
Amine 2,4-D Weed Killer (2,4-D), 0.15 fl oz/A
RyzUp (Gibberellic Acid), 2 fl oz/A

Timing
Internode Initiation (II), 27 May

Pertinent Rainfall: No significant rain within 8 hr after foliar applications

Experimental Design: Randomized complete block and four replications.

Comments:

Plant Growth and Development

Gibberellic acid applied at the beginning of internode elongation had a temporary influence on plant stature (Table 1). At 7 days after treatment (DAT), plant height (distance from the soil surface to the tip of the longest leaf extended vertically) was 81 cm each for the treatments containing gibberellic acid. The control and 2,4-D alone had plant heights of 73 cm each. Similar responses were noted over the 2-week period following application. At 14 DAT, plant height for the treatments containing gibberellic acid was 89 cm compared with 83 cm for the control and 2,4-D alone. At 20 DAT, corresponding plant heights were 90 and 94 cm.

Crop Production

Crop stature, maturity, and production were evaluated at harvest, and none was significantly affected by gibberellic acid (Table 1). Mature plant height (distance from the soil surface to the tip of the panicle extended vertically) was 100 cm regardless of plant growth regulator treatment and in the control. Grain moisture (an indicator of crop maturity) ranged between 21.0 and 21.3% for the plant growth regulator treatments (control = 21.3%). Grain yield (adjusted to 12% moisture) was higher in treatments receiving 2,4-D alone and in combination with gibberellic acid (10841 and 10540 lb/A, respectively) compared with the control and gibberellic acid alone (10413 and 10428 lb/A, respectively).

Table 1. The effects of auxin and gibberellin applied at the beginning of stem internode elongation on crop growth and production in drill-seeded rice. Rice Research Station, Crowley, LA. 2005.

Treatment Name	Fm Ds	Rate	Grow Stg	Pl. Ht. (cm) 7 DAT	Pl. Ht. (cm) 14 DAT	Pl. Ht. (cm) 20 DAT	Pl. Ht. (cm)	Grain Mositure (%)	Grain Yield (lb/A)
Control				73b	83b	89c	100a	21.3a	10413a
Amine 4	l	0.150	II	73b	83b	90b	100a	21.3a	10841a
RyzUp	l	2	II	81a	89a	94a	100a	21.0a	10428a
Amine 4 RyzUp	l l	0.150 2	II II	81a	89a	94a	100a	21.0a	10540a
LSD (.05)	=			2	2	1	2	0.4	680
Standard Dev.	=			1.3017	1.0307	.75	1.1334	.22755	425.29
CV	=			1.70	1.20	0.82	1.13	1.08	4.03

Means followed by same letter do not significantly differ (Duncan's multiple range test, P=.05).

YIELD ENHANCEMENT STUDIES – FIRST CROP

R.T. Dunand and R.R. Dilly, Jr.

Experiment: Auxin and Gibberellin Applied During Tillering, Crop Development, and Production in Drill-Seeded Rice

General Methodology: See North Unit/General Methodology (pg. 283)

Variety: Cheniere

Treatment(s): **Plant Growth Regulator** (with Agri Dex, 1 qt/A)
Amine 2,4-D Weed Killer (2,4-D), 0.075 fl oz/A
RyzUp (Gibberellic Acid), 2 fl oz/A

Timing
Mid Tillering (MT), 12 May

Pertinent Rainfall: No significant rain within 8 hr after foliar applications

Experimental Design: Randomized complete block and four replications.

Comments:

Plant Growth and Development

Gibberellic acid applied during tillering had a temporary influence on plant stature (Table 1). At 7 days after treatment (DAT), plant height (distance from the soil surface to the tip of the longest leaf extended vertically) was 61 cm each for the treatments containing gibberellic acid. The control and 2,4-D alone had plant heights of 52 and 50 cm, respectively. Similar responses lasted an additional week. At 14 DAT, plant heights for gibberellic acid alone and in combination with 2,4-D were 65 and 66 cm, respectively, compared with 58 and 56 cm for the control and 2,4-D alone, respectively. At 22 DAT, plant heights for the plant growth regulator treatments ranged between 71 and 72 cm (control = 73 cm).

Crop Production

Crop stature, maturity, and production were evaluated at harvest, and none was significantly affected by gibberellic acid (Table 1). Mature plant height (distance from the soil surface to the tip of the panicle extended vertically) was 100 cm regardless of plant growth regulator treatment and in the control. Grain moisture (an indicator of crop maturity) ranged between 21.0 and 21.4% for the plant growth regulator treatments (control = 21.3%). Grain yield (adjusted to 12% moisture) was higher in treatments receiving 2,4-D alone and in combination with gibberellic acid (10732 and 10724 lb/A, respectively) compared with the control and gibberellic acid alone (10581 and 10489 lb/A, respectively).

Table 1. The effects of auxin and gibberellin applied during tillering on crop growth and production in drill-seeded rice. Rice Research Station, Crowley, LA. 2005.

Treatment Name	Fm Ds	Rate	Grow Stg	Pl. Ht. (cm) 7 DAT	Pl. Ht. (cm) 14 DAT	Pl. Ht. (cm) 22 DAT	Pl. Ht. (cm)	Grain Mositure (%)	Grain Yield (lb/A)
Control				52b	58b	73a	100a	21.3a	10581a
Amine 4	l	0.075	MT	50c	56b	71a	100a	21.0a	10732a
RyzUp	l	1	MT	61a	65a	72a	100a	21.4a	10489a
Amine 4 RyzUp	l l	0.075 1	MT MT	61a	66a	72a	100a	21.1a	10724a
LSD (.05)	=			1	2	2	1	0.5	768
Standard Dev.	=			.85391	1.4166	1.0833	.85391	.2984	480.42
CV	=			1.53	2.32	1.51	0.86	1.41	4.52

Means followed by same letter do not significantly differ (Duncan's multiple range test, P=.05).

YIELD ENHANCEMENT STUDIES – FIRST CROP

R.T. Dunand and R.R. Dilly, Jr.

Experiment: Auxin and Gibberellin Applied at the Beginning of Reproductive Development, Crop Development, and Production in Drill-Seeded Rice

General Methodology: See North Unit/General Methodology (pg. 283)

Variety: Cheniere

Treatment(s): **Plant Growth Regulator** (with Agri Dex, 1 qt/A)
Amine 2,4-D Weed Killer (2,4-D), 0.225 fl oz/A
RyzUp (Gibberellic Acid), 2 fl oz/A

Timing
Panicle Differentiation (PD), 9 June

Pertinent Rainfall: No significant rain within 8 hr after foliar applications

Experimental Design: Randomized complete block and four replications.

Comments:

Plant Growth and Development

Gibberellic acid applied at the beginning of the reproductive phase had a temporary influence on plant stature (Table 1). At 7 days after treatment (DAT), plant height (distance from the soil surface to the tip of the longest leaf extended vertically) ranged between 101 and 102 cm for the treatments containing gibberellic acid. The control and 2,4-D alone had plant heights of 92 and 91 cm, respectively. Similar responses were noted over the 2- week period following application. At 18 DAT, plant heights for the treatments containing gibberellic acid was 112 cm compared with 102 cm for the control and 2,4-D alone. At 22 DAT, corresponding plant heights were 114 and 104 cm.

Crop Production

Crop stature, maturity, and production were evaluated at harvest, and only crop stature was significantly affected by gibberellic acid (Table 1). Mature plant height (distance from the soil surface to the tip of the panicle extended vertically) was 102 and 101 cm for gibberellic acid alone and in combination with 2,4-D, respectively. Mature plant height for the control and 2,4-D alone was 100 cm each. Grain moisture (an indicator of crop maturity) ranged between 20.7 and 22.1% for the plant growth regulator treatments (control = 20.8%). Grain yield (adjusted to 12% moisture) was higher in treatments receiving 2,4-D alone and in combination with gibberellic acid (10526 and 10586 lb/A, respectively) compared with the control and gibberellic acid alone (10224 and 10291 lb/A, respectively).

Table 1. The effects of auxin and gibberellin applied at the beginning of reproductive development on crop growth and production in drill-seeded rice. Rice Research Station, Crowley, LA. 2005.

Treatment Name	Fm Ds	Rate	Grow Stg	Pl. Ht. (cm) 7 DAT	Pl. Ht. (cm) 18 DAT	Pl. Ht. (cm) 22 DAT	Pl. Ht. (cm)	Grain Moisture (%)	Grain Yield (lb/A)
Control				92b	102b	104b	100b	20.8a	10224a
Amine 4	l	0.225	PD	91b	102b	104b	100b	20.7a	10526a
RyzUp	l	3	PD	101a	112a	114a	102a	20.8a	10291a
Amine 4 RyzUp	l l	0.225 3	PD PD	102a	112a	113a	101ab	22.1a	10586a
LSD (.05) =				1	3	3	2	1.5	635
Standard Dev. =				.91666	1.6853	1.6244	1	.92108	397.16
CV =				0.95	1.58	1.50	0.99	4.37	3.82

Means followed by same letter do not significantly differ (Duncan's multiple range test, P=.05).

YIELD ENCHANCEMENT STUDIES – SECOND CROP

R.T. Dunand and R.R. Dilly, Jr.

Experiment: First Crop Cutting Height and Second Crop Production in Drill-Seeded Rice

General Methodology: See South Unit/General Methodology (pg. 284)

Variety: See Treatments

Treatment(s): **Variety(s)** – Jupiter, Trenasse, and XP-723

First Crop Cutting Height – 9 and 18 inches

Pertinent Rainfall: Not Applicable

Experimental Design: Randomized complete block and two replications with four subplots per replication. Factorial arrangement of treatments with three varieties and two cutting heights (3x2) for a total of six treatments.

Comments: **First (Main) Crop Stubble Height and Straw Production**

Plots were harvested by combine in one continuous motion without stopping between subplots. This produced an even layer of straw over each subplot and replicate. There was a significant difference in the amount of straw deposited on the stubble of the different cutting height treatments (Table 1). As cutting height was decreased, straw deposition increased with an average of 16 and 47 tons/A of straw produced for the 18- and 9-inch stubble heights, respectively. With the change in cutting height, straw production increased more in XP723 (from 19 to 65 tons/A) compared with Jupiter (from 16 to 40 tons/A) and Trenasse (from 13 to 35 tons/A) (Table 2).

Second (Ratoon) Crop Growth

The rate of reproductive growth and development was affected by first crop cutting height (Table 1). Panicle emergence was slightly earlier and number of panicles higher with the higher cutting height at 6 weeks after first crop harvest (WAH). On average, panicle densities were 3, 6, and 9 panicles/ft^2 for Jupiter, Trenasse, and XP723, and panicle densities were 1 and 11 panicles/ft^2 for the 9- and 18-inch stubble heights, respectively. With the change in cutting height, heading increased more in XP723 (from 1 to 16 panicles/ft^2) compared with Jupiter (from 0 to 5 panicles/ft^2) and Trenasse (from 2 to 11 panicles/ft^2) (Table 2).

Second (Ratoon) Crop Production

Crop stature, maturity, and production were evaluated at harvest, and all were significantly affected (Table 2). Mature plant height (distance from the soil surface to the tip of the panicle extended vertically) averaged 72, 74, and 80 cm for Jupiter, Trenasse, and XP723, respectively. On average, mature plant height increased slightly from 75 to 76 cm when cutting height was reduced from 18 to 9 inches. Grain moisture (an indicator of crop maturity) averaged 20.9, 17.7, and 18.5% for Jupiter, Trenasse, and XP723, respectively. On average, grain moisture increased (17.7% vs. 20.4%) as cutting height decreased. These results, along with the previously discussed panicle emergence results, indicate a trend toward delaying maturity by lowering cutting height. On average, grain yields (adjusted to 12% moisture) were 2011, 1282, and 1604 lb/A for Jupiter, Trenasse, and XP723, respectively, and grain yields were 1183 and 2082 lb/A for the 9- and 18-inch stubble heights, respectively. With the change in cutting height, grain yield increased more in XP723 (from 893 to 2315 lb/A) followed by Jupiter (from 1470 to 2552 lb/A) and Trenasse (from 1186 to 1379 lb/A), which had the least increase (Table 2).

Table 1. The main effects of variety and first (main) crop cutting height on straw residue and second (ratoon) crop growth and production in drill-seeded rice. Rice Research Station, Crowley, LA. 2005.

Treatment Name	Fm Ds Rate	Grow Stg	1st Crop Stubble Height (cm)	1st Crop Straw Dry Wt. (tons/A)	2nd Crop Pan.Den (pan./ sq ft) 6 WAH	2nd Crop Pl. Ht. (cm)	2nd Crop Grain Moisture (%)	2nd Crop Grain Yield (lb/A)
TABLE OF VARIETY MEANS								
Jupiter			14	28	3	72a	20.1a	2011
Trenasse			14	24	6	74b	17.7b	1282
XP723			13	42	9	80c	18.5b	1604
TABLE OF STUBBLE HEIGHT MEANS								
9-inch			9a	47	1	76a	20.4a	1183
18-inch			18b	16	11	75b	17.7b	2082

Within the same table, means followed by the same letter do not differ significantly (Duncan's multiple range test, P=.05).

Table 2. The simple effects of variety and first (main) crop cutting height on straw residue and second (ratoon) crop growth and production in drill-seeded rice. Rice Research Station, Crowley, LA. 2005.

Treatment Name	Fm Ds Rate	Grow Stg	1st Crop Stubble Height (cm)	1st Crop Straw Dry Wt. (tons/A)	2nd Crop Pan.Den (pan./ sq ft) 6 WAH	2nd Crop Pl. Ht. (cm)	2nd Crop Grain Moisture (%)	2nd Crop Grain Yield (lb/A)
Jupiter 9-inch			9b	40b	0c	72d	23.2a	1470b
Jupiter 18-inch			18a	16c	5bc	71d	18.6b	2552a
Trenasse 9-inch			8b	35b	2c	75c	18.4b	1186bc
Trenasse 18-inch			19a	13c	11ab	74c	17.0b	1379bc
XP723 9-inch			8b	65a	1c	81a	19.7b	893c
XP723 18-inch			18a	19c	16a	80b	17.4b	2315a
LSD (.05)	=		2	10	8	1	2.7	560
Standard Dev.	=		.56672	3.7058	2.4902	.55901	1.0369	217.89
CV	=		4.20	11.86	43.31	0.74	5.45	13.35

Means followed by the same letter do not differ significantly (Duncan's multiple range test, P=.05).

Panicle production (panicle and grain density) was evaluated just prior to harvest and was significantly affected by variety and first crop stubble height. Stems that grew from the base of the stubble (at ground level) produced more panicles when stubble height was 18 inches (27 panicles/ft^2) compared with 9 inches (12 panicles/ft^2), and the effect of stubble height was independent of variety (Table 3). Panicle densities for stems that grew from the upper portion of the stubble (originating from lateral buds at nodes) varied, depending on variety and stubble height (Table 4). Jupiter and XP723 were affected similarly by cutting height. For Jupiter and XP723, upper panicle densities were 1 and 2 panicles/ft^2, respectively, with the 9-inch stubble height and 8 and 11 panicles/ft^2, respectively, with the 18-inch stubble height. For Trenasse, the effect of tall stubble height was less with the same panicle densities being 1 and 5 panicles/ft^2. The effects of stubble height on upper panicle density produced similar effects on total (base plus upper) panicle densities. For Jupiter and XP723, total panicle densities were 12 and 11 panicles/ft^2, respectively, with the 9-inch stubble height and 32 and 39 panicles/ft^2, respectively, with the 18-inch stubble height.

For Trenasse, the effect of the tall stubble height was less with panicle densities being 17 and 32 panicles/ft^2, respectively. Panicle weights were closely related to panicle densities. Basal panicle weights were high (20.47 g/ft^2) with the 18-inch stubble height compared with the 9-inch stubble height (15.85 g/ft^2), regardless of variety (Table 3). Upper panicle weights were 15.69 g/ft^2 and 14.05 g/ft^2 with the low stubble height for Jupiter and XP723, respectively, compared with 20.83 g/ft^2 and 22.63 g/ft^2 with the high stubble height. For Trenasse, comparable panicle weights were 17.82 and 17.94 g/ft^2. With panicle weight, basal panicle weight had the major influence on total panicle weight. Total panicle weights averaged 18.02 and 27.30 g/ft^2 across varieties for the 9- and 18-inch stubble heights, respectively.

Table 3. The main effects of variety and first (main) crop cutting height on second (ratoon) crop panicle production. Rice Research Station, Crowley, LA. 2005.

Treatment Name	Fm Ds Rate	Grow Stg	2nd Crop Pan.Den. (pan./sq ft) base	2nd Crop Pan.Den. (pan./sq ft) upper	2nd Crop Pan.Den. (pan./sq ft) total	2nd Crop Pan. Wt. (g/sq ft) base	2nd Crop Pan. Wt. (g/sq ft) upper	2nd Crop Pan. Wt. (g/sq ft) total
			TABLE OF VARIETY MEANS					
Jupiter			17	5	22	18.26	5.33	23.59
Trenasse			22	3	25	17.88	1.82	19.70
XP723			19	6	25	18.34	6.36	24.70
			TABLE OF STUBBLE HEIGHT MEANS					
9-inch			12a	1	13	15.85a	2.17	18.02a
18-inch			27b	8	35	20.47b	6.83	27.30b

Within the same table, means followed by the same letter do not differ significantly (Duncan's multiple range test, P=.05).

Table 4. The simple effects of variety and first (main) crop cutting height on second (ratoon) crop panicle production. Rice Research Station, Crowley, LA. 2005.

Treatment Name	Fm Ds Rate	Grow Stg	2nd Crop Pan.Den. (pan./sq ft) base	2nd Crop Pan.Den. (pan./sq ft) upper	2nd Crop Pan.Den. (pan./sq ft) total	2nd Crop Pan. Wt. (g/sq ft) base	2nd Crop Pan. Wt. (g/sq ft) upper	2nd Crop Pan. Wt. (g/sq ft) total
Jupiter 9-inch			11c	1d	12b	15.69a	1.77c	17.46b
Jupiter 18-inch			24ab	8b	32a	20.83a	8.89a	29.72ab
Trenasse 9-inch			16bc	1d	17b	17.82a	0.96c	18.77ab
Trenasse 18-inch			28a	5c	32a	17.94a	2.69bc	20.63ab
XP723 9-inch			9c	2d	11b	14.05a	3.79b	17.84b
XP723 18-inch			28a	11a	39a	22.63a	8.92a	31.55a
LSD (.05)	=		9	2	11	11.19	1.88	12.70
Standard Dev.	=		2.8963	.59072	3.4077	3.5161	.59054	3.9912
CV	=		15.08	12.72	14.29	19.36	13.11	17.61

Means followed by same letter do not significantly differ (Duncan's multiple range test, P=.05).

YIELD ENHANCEMENT STUDIES – SECOND CROP

R.T. Dunand and R.R. Dilly, Jr.

Experiment: 2,4-D Rate and Second Crop Production in Drill-Seeded Rice

General Methodology: See South Unit/General Methodology (pg. 284)

Variety: CL131

Treatment(s): **Plant Growth Regulator**
Amine 4 2,4-D Weed Killer

Timing
Ratoon seedling stage (SD), 24 Aug

Pertinent Rainfall: No significant rain within 24 hr after foliar applications

Experimental Design: Randomized complete block and four replications.

Comments: **Crop Production**

Crop stature, maturity, and production were evaluated at harvest, and none was significantly affected by the applications of 2,4-D (Table 1). Mature plant height (distance from the soil surface to the tip of the panicle extended vertically) ranged between 62 and 64 cm (control=63 cm). Grain moisture (an indicator of crop maturity) ranged between 25.8 and 28.3% (control = 27.0%). Grain yield (adjusted to 12% moisture) was highest (818 lb/A) with the rate of 1.6 fl oz/A of Amine 4 2,4-D Weed Killer, and in general, the remaining treatments also had yields (634 and 802 lb/A) comparable with the control (756 lb/A).

Table 1. The effects of 2,4-D on second crop production in drill-seeded rice. Rice Research Station, Crowley, LA. 2005.

Treatment Name	Fm Ds	Rate	Grow Stg	2nd Crop Pl. Ht. (cm)	2nd Crop Grain Moisture (%)	2nd Crop Grain Yield (lb/A)
Control				63a	27.0a	756a
2,4-D	l	16	SD	63a	28.3a	634a
2,4-D	l	1.6	SD	64a	26.4a	818a
2,4-D	l	.16	SD	62a	25.8a	802a
LSD (.05) =				2	6.7	194
Standard Dev.=				1.1086	4.2102	121.1
CV =				1.76	15.67	16.10

Means followed by same letter do not differ significantly (Duncan's multiple range test, P=.05).

YIELD ENHANCEMENT STUDIES – SECOND CROP

R.T. Dunand and R.R. Dilly, Jr.

Experiment: Post-First Crop Harvest Plant Growth Regulators and Second Crop Production in Drill-Seeded Rice

General Methodology: See South Unit/General Methodology (pg. 284)

Variety: Cocodrie

Treatment(s): **Plant Growth Regulator**
Royal MH-30 SG (0.75 and 1.5 lb ai/A)
RyzUp (2 fl oz/A)

Timing
Weekly - 24 (3 weeks post-first crop harvest) and 31 Aug; 7, 14, 21, and 29 Sept

Pertinent Rainfall: No significant rain within 8 hr after foliar applications

Experimental Design: Randomized complete block and six replications.

Comments: **Crop Production**

Crop stature, maturity, and production were evaluated at harvest, and only grain yield was significantly different from the control (Table 1). Mature plant height (distance from the soil surface to the tip of the panicle extended vertically) ranged between 67 and 69 cm (control=68 cm). The general trend was that maleic hydrazide decreased plant height and gibberellic acid increased plant height. Grain moisture (an indicator of crop maturity) ranged between 18.5 and 20.3% (control = 19.9%). Grain moisture tended to be lower in the gibberellic acid treatments. Grain yield (adjusted to 12% moisture) was highest (1057 lb/A) in the control and tended to be lower with maleic hydrazide. The effect of maleic hydrazide on yield was rate dependent with yields (774 and 770 lb/A) lower than the control noted at the 5- and 6-week after first crop harvest timings.

Table 1. The effects of plant growth regulators and time of application on second crop production in drill-seeded rice. Rice Research Station, Crowley, LA. 2005.

Treatment Name	Fm Ds	Rate	Rate Unit	Grow Stg	2nd Crop Pl. Ht. (cm)	2nd Crop Grain Moisture (%)	2nd Crop Grain Yield (lb/A)
Control					68ab	19.9ab	1057a
Royal MH-30 SG	d	0.75	lb/A	3WAH	68ab	18.7b	980ab
Royal MH-30 SG	d	1.50	lb/A	3WAH	68ab	19.2ab	920ab
Royal MH-30 SG	d	0.75	lb/A	4WAH	67b	19.2ab	975ab
Royal MH-30 SG	d	1.50	lb/A	4WAH	67b	20.3a	865ab
Royal MH-30 SG	d	0.75	lb/A	5WAH	67b	19.1ab	862ab
Royal MH-30 SG	d	1.50	lb/A	5WAH	67b	19.5ab	774b
Royal MH-30 SG	d	0.75	lb/A	6WAH	68ab	19.4ab	895ab
Royal MH-30 SG	d	1.50	lb/A	6WAH	67b	19.5ab	770b
RyzUP	l	2	oz p/A	6WAH	70a	18.5b	1015a
RyzUp	l	2	oz p/A	7WAH	69ab	18.9ab	975ab
LSD (.05) =					2	1.2	200
Standard Dev. =					1.6218	1.0534	171.65
CV =					2.40	5.46	18.72

Means followed by same letter do not differ significantly (Duncan's multiple range test, P=.05).

YIELD ENCHANCEMENT STUDIES – FIRST AND SECOND CROP

R.T. Dunand and R.R. Dilly, Jr.

Experiment: Seeding Rate, Release, RyzUp, and Crop Production in Drill-Seeded Rice

General Methodology: See South Unit/General Methodology (pg. 284)

Variety: CL131

Treatment(s): **Seeding Rate(s)** – 45 and 90 lb/A

Plant Growth Regulator (gibberellic acid)
Release (0.35 oz/cwt)
RyzUp (5 fl oz/A)

Timing
Seed (seed) by cement mixer, 17 Mar
100% Heading (HD) by backpack sprayer, 7 July
100% Heading + 4 days (HD+4) by backpack sprayer, 11 July

Pertinent Rainfall: No rain within 6 hr after foliar application

Experimental Design: Randomized complete block and six replications. Factorial arrangement of treatments with two seeding rates, two plant growth regulator seed treatments, and three plant growth regulator foliar treatments (2x2x3) for a total of 12 treatments.

Comments: **Crop Production - First (Main) Crop**

Crop stature, maturity, and production were evaluated at harvest. Foliar treatment with gibberellic acid had a direct effect on mature plant height and grain yield, and seeding rate had a direct effect on grain yield (Table 1). The effects of foliar treatment with gibberellic acid and seeding rate were independent (Table 2). Seed treatment with gibberellic acid and seeding rate had a combined effect on grain moisture, and foliar treatment with gibberellic acid had no effect on grain moisture.

Plant height was evaluated as mature plant height (Table 1). Mature plant height (distance from the soil surface to the tip of the panicle extended vertically) averaged 89, 92, and 90 cm with the control and RyzUp applications at heading and 4 days after heading, respectively, independently of seeding rate and treatment with gibberellic acid.

Harvest was a few days earlier than normal according to grain moisture. Grain moisture, an indicator of crop maturity, ranged between 21.8 and 23.4% (Table 2). With seed treatment with gibberellic acid, grain moisture averaged 22.3%, regardless of seeding rate. Without seed treatment with gibberellic acid, grain moisture averaged 23.1% at the seeding rate of 45 lb/A compared with 22.1% at the higher seeding rate (90 lb/A).

Grain yield was increased by seeding rate and decreased by foliar application of gibberellic acid during heading (Table 1). Grain yield (adjusted to 12% moisture) averaged 8732 lb/A at the higher seeding rate (90 lb/A) compared with 8229 lb/A at the lower seeding rate (45 lb/A). Gibberellic acid applied at heading and 4 days after heading reduced grain yield approximately 300 lb/A cumulatively with each application. Grain yields were 8469 lb/A for the heading application and 8195 lb/A with application 4 days after heading (control = 8778 lb/A). The effects of gibberellic acid and seeding rate on grain yield were independent (Table 2). Grain yield was unaffected by seed treatment with gibberellic acid.

Crop Production - Second (Ratoon) and Total Crop

Second crop production was influenced by plant growth regulator and seeding rate (Table 1). Mature plant height was increased slightly by seed treatment with gibberellic acid (64 vs 63 cm). Grain moisture ranged between 20.8 and 28.3% (Table 2) and was higher with seed treatment with gibberellic acid compared with no plant growth regulator seed treatment (24.0 vs 27.3%) and with the lower seeding rate compared with the higher seeding rate (26.6 vs 24.7%). On average, grain yield was increased by gibberellic acid applied during heading of the first crop with yields of 786, 904, and 956 lb/A for the control and two gibberellic acid treatments, respectively. The effects of seeding rate on grain yield were dependent on seed treatment. Without a gibberellic acid seed treatment, grain yields decreased with an increase in seeding rate. Grain yields averaged 883 and 715 lb/A at the 45 and 90 lb/A seeding rates, respectively. Conversely, with a gibberellic acid seed treatment, grain yields were 708 and 922 lb/A for the low and high seeding rates. Total grain yield (first plus second crop) was affected similar to first crop yields with higher average grain production associated with the higher seeding rate (9700 lb/A) compared with the lower seeding rate (9025 lb/A), and lower grain production was associated with the foliar gibberellic acid treatments during heading of the first crop (9373 and 9150 lb/A for the heading and heading plus 4 days treatments) compared with the control (9564 lb/A).

Table 1. The main effects of seeding rate and plant growth regulator seed and foliar treatments on first and second crop production in drill-seeded rice. Rice Research Station, Crowley, LA. 2005.

Treatment Name	Fm Ds	Rate	Grow Stg	1st Crop Pl. Ht. (cm)	1st Crop Moisture Grain (%)	1st Crop Grain Yield (lb/A)	2nd Crop Pl. Ht. (cm)	2nd Crop Grain Moisture (%)	2nd Crop Grain Yield (lb/A)	Total Grain Yield (lb/A)
TABLE OF PLANT GROWTH REGULATOR SEED TREATMENT MEANS										
Release Check		0	Seed	91	22.6	8419	63a	24.0a	949	9368
Release	sp	0.35	Seed	90	22.3	8543	64b	27.3b	815	9358
TABLE OF SEEDING RATE MEANS										
45lb/A				90	22.7	8229a	64	26.6a	796	9025a
90lb/A				90	22.2	8732b	64	24.7b	968	9700b
TABLE OF PLANT GROWTH REGULATOR FOLIAR TREATMENT MEANS										
RyzUp Check				89a	22.5	8778a	64	26.5	786a	9564a
RyzUp	l	5	HD	92b	22.4	8469b	64	25.3	904b	9373ab
RyzUp	l	5	HD+4	90ab	22.4	8195c	64	25.1	956b	9150b

Within the same table, means followed by the same letter do not differ significantly (Duncan's multiple range test, P=.05).

Table 2. The simple effects of seeding rate and plant growth regulator seed and foliar treatments on first and second crop production in drill-seeded rice. Rice Research Station, Crowley, LA. 2005.

Treatment Name	Fm Ds	Rate	Grow Stg	1st Crop Pl. Ht. (cm)	1st Crop Moisture Grain (%)	1st Crop Grain Yield (lb/A)	2nd Crop Pl. Ht. (cm)	2nd Crop Grain Moisture (%)	2nd Crop Grain Yield (lb/A)	Total Grain Yield (lb/A)
Release Check 45lb/A RyzUp Check		0	Seed	89e	23.4a	8398cd	63b	26.5ab	823bc	9221bcd
Release Check 45lb/A RyzUp		0	Seed	94a	22.8abc	8187cde	63b	24.5abc	913ab	9100cd
		5	HD							
Release Check 45lb/A RyzUp	l	0	Seed	89e	23.2ab	7798e	63b	25.5ab	914ab	8712d
		5	HD+4							
Release Check 90lb/A RyzUp Check		0	Seed	89e	22.1bc	9035ab	64ab	24.7abc	939ab	9974a
Release Check 90lb/A RyzUp	l	0	Seed	93ab	21.8c	8626bc	64ab	20.8c	1054a	9680ab
		5	HD							
Release Check 90lb/A RyzUp	l	0	Seed	90cde	22.4abc	8468c	63b	22.0bc	1051a	9520abc
		5	HD+4							
Release 45lb/A RyzUp Check	sp	0.35	Seed	89e	22.2bc	8559c	65ab	26.7a	619d	9178bcd
Release 45lb/A RyzUp	sp	0.35	Seed	92bc	22.4abc	8469c	64ab	29.0a	695cd	9163bcd
	l	5	HD							
Release 45lb/A RyzUp	sp	0.35	Seed	90de	22.2bc	7966de	65a	27.3a	811bc	8777d
	l	5	HD+4							
Release 90lb/A RyzUp Check	sp	0.35	Seed	89e	22.2bc	9121a	64ab	28.3a	763c	9883a
Release 90lb/A RyzUp	sp	0.35	Seed	91bcd	22.8abc	8595bc	64ab	26.8a	956ab	9551abc
	l	5	HD							
Release 90lb/A RyzUp	sp	0.35	Seed	90de	21.8c	8547c	64ab	25.7ab	1047a	9594abc
	l	5	HD+4							
LSD (.05)	=			2	1.0	435	1	4.0	136	479
Standard Dev.	=			1.4591	.85044	377.07	1.2715	3.4943	117.54	414.86
CV	=			1.61	3.79	4.45	2.00	13.63	13.33	4.43

Means followed by same letter do not significantly differ (Duncan's multiple range test, P=.05).

YIELD ENHANCEMENT STUDIES – FIRST AND SECOND CROP

R.T. Dunand and R.R. Dilly, Jr.

Experiment: Post-Heading First Crop Plant Growth Regulator Treatments and Crop Production in Drill-Seeded Rice

General Methodology: See South Unit/General Methodology (pg. 284)

Variety: Cheniere

Treatment(s): **Plant Growth Regulator**
N-Large Premier (0.8, 1.6, and 16 fl oz/A)
Sto-3 (16 fl oz/A)
Sugar Mover (32 fl oz/A)

Timing
Dough Stage (DS), 17 July
Physiological Maturity (PM), 1 Aug

Pertinent Rainfall: No significant rain within 24 hr after foliar applications

Experimental Design: Randomized complete block and seven replications.

Comments:

Crop Production – First (Main) Crop

Crop stature, maturity, and production were evaluated at harvest, and grain moisture and yield were significantly affected by the applications of the plant growth regulators (Table 1). Plant stature was not. Mature plant height (distance from the soil surface to the tip of the panicle extended vertically) ranged between 88 and 89 cm (control=89 cm). Grain moisture (an indicator of crop maturity) ranged between 20.2 and 20.9% (control = 20.6%). Rice treated with N-Large Premier (0.8 fl oz/A) at dough stage was slightly higher in grain moisture (20.9%) compared with rice treated with N-Large Premier (16 fl oz/A) at dough stage and Sugar Mover at physiological maturity (20.2%). In general, most of the plant growth regulator treatments had higher yields compared with the control. Grain yield (adjusted to 12% moisture) was highest (8041 lb/A) with the combination treatment of Sugar Mover and Sto-3 compared with the control (7663 lb/A) and other plant growth regulator treatments (7261 to 7953 lb/A). Rice treated with N-Large Premier (16 fl oz/A) had a significantly lower grain yield (7261 lb/A) compared with any of the other plant growth regulator treatments (7739 to 8041 lb/A).

Crop Production – Second (Ratoon) and Total Crop

Crop stature, maturity, and production were evaluated at harvest, and plant height and grain yield were significantly affected by the applications of the plant growth regulators in the first crop (Table 1). Grain moisture was not. Grain moisture ranged between 17.8 and 20.4% (control=20.2%). Mature plant height ranged between 70 and 73 cm (control=72 cm). N-Large Premier tended to shorten the second crop. Grain yield was highest in the N-Large Premier treatments, ranging between 1336 and 1530 lb/A (control=1020 lb/A). Grain yields of the treatments with Sugar Mover and Sto-3 ranged between 1071 and 1151 lb/A.

Total crop grain yields (first plus second crop) were relatively unaffected by the plant growth regulator treatments, indicating the differences noted in the first crop tended to be balanced by differences in the second crop (Table 1). Total crop grain yields were generally higher in the plant growth regulator treatments, ranging between 8791 and 9316 lb/A compared with the control (8739 lb/A).

Table 1. The effect of late season first crop applications of plant growth regulators on first and second crop production in drill-seeded rice. Rice Research Station, Crowley, LA. 2005.

Treatment Name	Fm Ds	Rate	Grow Stg	1st Crop Pl. Ht. (cm)	1st Crop Grain Moisture (%)	1st Crop Grain Yield (lb/A)	2nd Crop Pl. Ht. (cm)	2nd Crop Grain Moisture (%)	2nd Crop Grain Yield (lb/A)	Total Grain Yield (lb/A)
Control				89a	20.6ab	7663ab	72abc	20.2a	1020c	8739a
N-LargePremier	l	0.8	DS	89a	20.9a	7890a	72abc	19.2ab	1336ab	9226a
N-LargePremier	l	1.6	DS	89a	20.6ab	7949a	70c	19.3ab	1367ab	9316a
N-LargePremier	l	16	DS	88a	20.2b	7261b	71bc	17.8b	1530a	8791a
Sugar Mover	l	32	PM	89a	20.2b	7739a	73a	20.4a	1071c	8809a
Sto-3	l	16	PM	88a	20.4ab	7953a	72abc	19.9a	1096c	9049a
Sugar Mover	l	32	PM	89a	20.8ab	8041a	73ab	19.5ab	1151bc	9136a
Sto-3	l	16	PM							
LSD (.05)	=			1	0.5	409	2	1.7	227	530
Standard Dev.	=			1.3367	.46814	374.34	1.8313	1.5587	207.78	485.61
CV	=			1.51	2.28	4.81	2.55	8.00	16.97	5.39

Means followed by same letter do not differ significantly (Duncan's multiple range test, P=.05).

YIELD ENHANCEMENT STUDIES – FIRST AND SECOND CROP

R.T. Dunand and R.R. Dilly, Jr.

Experiment: Heading and Post-Heading First Crop Plant Growth Regulator Treatments and Crop Production in Drill-Seeded Rice

General Methodology: See South Unit/General Methodology (pg. 284)

Variety: Cheniere

Treatment(s):

Plant Growth Regulator
- Embark (16 fl oz/A)
- N-Large Premier (2.5 fl oz/A)
- Royal MH-30 SG (1.5 lb ai/A)
- X-Cyte (8 fl oz/A)

Timing
- Heading (HD), 6 July
- Heading + 2 days (HD+2), 8 July
- Dough Stage (DS), 19 July
- Physiological Maturity (PM), 26 July

Pertinent Rainfall: No significant rain within 24 hr after foliar applications

Experimental Design: Randomized complete block and four replications.

Comments:

Crop Production – First (Main) Crop

Crop stature, maturity, and production were evaluated at harvest, and none were significantly affected by the applications of the plant growth regulators (Table 1). Mature plant height (distance from the soil surface to the tip of the panicle extended vertically) ranged between 93 and 98 cm (control=93 cm). Plant height with N-Large Premier applied at heading appeared to be taller (98 cm) compared with the control. Grain moisture (an indicator of crop maturity) ranged between 21.4 and 24.1% (control = 21.4%). Grain moisture with Enlarge Premier applied at heading appeared to be higher (24.1%) compared with the control. In general, rice treated with Royal MH-30 SG had higher yields compared with the control. Grain yield (adjusted to 12% moisture) was highest (9106 lb/A) with Royal MH-30 SG applied at physiological maturity compared with the control (8722 lb/A) and other plant growth regulator treatments (8275 to 8909 lb/A). Rice treated with N-Large Premier at heading had a lower grain yield (8275 lb/A) compared with Royal MH-30 SG applied at dough stage (8909 lb/A) and physiological maturity (9106 lb/A).

Crop Production – Second (Ratoon) and Total Crop

Crop stature, maturity, and production were evaluated at harvest, and grain yield was significantly affected by the applications of the plant growth regulators (Table 1). Mature plant height ranged between 67 and 70 cm (control=69 cm), and grain moisture ranged between 18.6 and 21.3% (control=21.6%). In general, all plant growth regulator treatments had higher yields (ranged from 1189 to 1497 lb/A) compared with the control (997 lb/A). N-Large Premier plus X-Cyte applied 2 days after 100% heading and Embark applied at PM and Royal MH-30 SG applied at DS had significantly higher grain yields compared with the control. Although similar results were noted in total grain yield (first plus second crop grain yields), grain yields of the plant growth regulator treatments (ranged from 9470 to 10405 lb/A) were not significantly different from the control (9719 lb/A).

Table 1. The effects of heading and post heading plant growth regulator treatments in the first crop on first and second crop production in drill-seeded rice. Rice Research Station, Crowley, LA. 2005.

Treatment Name	Fm Ds	Rate	Rate Unit	Grow Stg	1st Crop Pl. Ht. (cm)	1st Crop Grain Moisture (%)	1st Crop Grain Yield (lb/A)	2nd Crop Pl. Ht. (cm)	2nd Crop Grain Moisture (%)	2nd Crop Grain Yield (lb/A)	Total Grain Yield (lb/A)
Control					93b	21.4b	8722ab	69a	21.6a	997c	9719ab
N-LargePremier	l	2.5	oz p/A	HD	98a	24.1a	8275b	69a	20.1ab	1195bc	9470b
N-LargePremier	l	2.5	oz p/A	HD+ 2	95b	22.5ab	8630ab	70a	20.1ab	1291ab	9921ab
X-Cyte	l	8	oz p/A	HD+2							
Embark	l	16	oz p/A	DS	95ab	22.0b	8680ab	70a	21.3ab	1189bc	9868ab
Embark	l	16	oz p/A	PM	95ab	22.5ab	8740ab	67a	20.5ab	1274ab	10014ab
Royal MH-30 SG	d	1.5	lb/A	DS	95ab	21.8b	8909a	70a	18.6b	1497a	10405a
Royal MH-30 SG	d	1.5	lb/A	PM	95ab	22.0b	9106a	69a	20.2ab	1204bc	10309a
LSD (.05)	=				3	1.9	527	4	2.5	240	670
Standard Dev.	=				1.9303	1.2648	354.45	2.3846	1.7134	161.6	451.22
CV	=				2.03	5.66	4.06	3.45	8.42	13.08	4.53

Means followed by same letter do not differ significantly (Duncan's multiple range test, P=.05).

RED RICE STUDIES

R.T. Dunand and R.R. Dilly, Jr.

Experiment: Herbicide, Plant Growth Regulators, Crop Tolerance, and Red Rice Control/Suppression in Drill-Seeded CL131 Planted at a Low Seeding Rate

General Methodology: See South Unit (Red Rice) General Methodology (pg. 285)

Variety: CL131

Seeding Rate: 30 lb/A

Treatment(s): **Herbicide** – Newpath (4 fl oz/A) + 0.25% Agri-Dex

Plant Growth Regulator
Embark 2S (16 fl oz/A)
Royal MH-30 SG (2.5 lb/A)

Timing
Preflood (PreFl), 18 May
Panicle Differentiation (PD), 23 June
Milk Stage (MS), 27 July
Dough Stage (DS), 3 Aug

Pertinent Rainfall: No significant rain within 8 hr after foliar applications

Experimental Design: Randomized complete block and six replications.

Comments:

Plant Growth and Development

Crop and weed growth and development were evaluated at maturity, and red rice growth was significantly affected by herbicide and plant growth regulator treatments (Table 1). Mature plant height (distance from the soil surface to the tip of the panicle extended vertically) of CL131 ranged between 82 and 85 cm (control=85 cm). With red rice, mature plant height ranged between 119 and 148 cm in the herbicide and plant growth regulator treatments (control=151 cm). Only the Royal MH-30 SG treatment alone had no effect on plant height. Due to the relatively low red rice infestation, lodging was low, ranging from 0 to 3%. Red rice panicle density was reduced by all treatments containing Newpath applied preflood (1 to 7 panicles/m^2) compared with the control and Embark 2S and Royal MH-30 SG treatments alone (45 to 50 panicles/m^2).

Crop Production

Crop maturity and production were evaluated at harvest, and grain yield was significantly affected by the herbicide but not the plant growth regulators (Table 1). Grain moisture (an indicator of crop maturity) ranged between 16.3 and 18.8% (control = 18.8%). Grain yield (adjusted to 12% moisture) was highest with treatments including Newpath applied preflood (4207 to 4885 lb/A), and in general, grain yield was lowest with plant growth regulator treatments alone (3635 to 3909 lb/A) compared with the control (4167 lb/A).

Table 1. The effects of herbicide and plant growth regulators on plant growth and crop production in CL131 drill-seeded at a low seeding rate. Rice Research Station, Crowley, LA. 2005.

Treatment Name	Fm Ds	Rate	Rate Unit	Grow Stg	CL131 Pl. Ht. (cm)	Red Pl. Ht. (cm)	CL131 Lodging (%)	Red Pan.Den. (panicle /sq m)	CL131 Grain Moisture (%)	CL131 Grain Yield (lb/A)
Control					85a	151a	3a	50a	18.8a	4167bc
Embark 2S	e	16	oz p/A	MS	83ab	136b	0b	45a	16.7a	3635c
Royal MH-30 SG	d	1.5	lb/A	DS	85ab	148a	2ab	50a	16.3a	3909bc
Newpath	e	4	oz p/A	PreFl	84ab	128c	0b	7b	17.4a	4885a
Newpath	e	4	oz p/A	PreFl	82b	119d	0b	1b	17.8a	4442ab
Newpath	e	4	oz p/A	PD						
Newpath	e	4	oz p/A	PreFl	85ab	131bc	0b	3b	17.6a	4207bc
Embark 2S	e	16	oz p/A	MS						
Newpath	e	4	oz p/A	PreFl	84ab	131bc	0b	1b	16.7a	4463ab
Royal MH-30 SG	d	1.5	lb/A	DS						
LSD (.05)	=				2	8	3	14	2.7	615
Standard Dev.	=				2.0732	6.4194	2.551	11.541	2.2791	521.85
CV	=				2.47	4.77	357.15	51.62	13.15	12.30

Means followed by same letter do not differ significantly (Duncan's multiple range test, P=.05).

RED RICE STUDIES

R.T. Dunand and R.R. Dilly, Jr.

Experiment: Herbicide, Plant Growth Regulators, Crop Tolerance, and Red Rice Control/Suppression in Drill-Seeded CL131 Planted at the Recommended Seeding Rate

General Methodology: See South Unit (Red Rice) General Methodology (pg. 285)

Variety: CL131

Seeding Rate: 90 lb/A

Treatment(s): **Herbicide** – Newpath (4 fl oz/A) + 0.25% Agri-Dex

Plant Growth Regulator
Embark 2S (16 fl oz/A)
Royal MH-30 SG (2.5 lb/A)

Timing
Preflood (PreFl), 18 May
Panicle Differentiation (PD), 23 June
Milk Stage (MS), 27 July
Dough Stage (DS), 3 Aug

Pertinent Rainfall: No significant rain within 8 hr after foliar applications

Experimental Design: Randomized complete block and six replications.

Comments:

Plant Growth and Development

Crop and weed growth and development were evaluated at maturity, and red rice growth was significantly affected by herbicide and plant growth regulator treatments (Table 1). Mature plant height (distance from the soil surface to the tip of the panicle extended vertically) of CL131 ranged between 84 and 88 cm (control=88 cm). With red rice, mature plant height ranged between 120 and 154 cm in the herbicide and plant growth regulator treatments (control=151 cm). The Embark 2S and Royal MH-30 SG treatments alone had no effect on plant height. Due to the relatively moderate red rice infestation, lodging was variable, ranging from 0 to 48%, and dependent on treatment. Treatments including Newpath applied preflood had 0% lodging, and Embark 2S and Royal MH-30 treatments alone had 40 and 48% lodging, respectively (control = 17%). Red rice panicle density was reduced by all treatments containing Newpath applied preflood (2 to 5 panicles/m^2) compared with the control and Embark 2S and Royal MH-30 SG treatments alone (65 to 75 panicles/m^2).

Crop Production

Crop maturity and production were evaluated at harvest, and both were significantly affected by the herbicide but not the plant growth regulators (Table 1). Grain moisture (an indicator of crop maturity) ranged between 14.9 and 15.2% with treatments including Newpath applied preflood, and grain moisture was 16.5 and 18.1% for Embark 2S and Royal MH-30 treatments alone, respectively (control = 17.9%). Grain yield (adjusted to 12% moisture) was highest with treatments including Newpath applied preflood (5418 to 6012 lb/A), and in general, grain yield was lowest with plant growth regulator treatments alone (2803 to 3541 lb/A) compared with the control (3565 lb/A).

Table 1. The effects of herbicide and plant growth regulators on plant growth and crop production in CL131 drill-seeded at the recommended seeding rate. Rice Research Station, Crowley, LA. 2005.

Name	Ds	Rate	Unit	Stg	CL131 Pl. Ht. (cm)	Red Pl. Ht. (cm)	CL131 Lodging (%)	Red Pan.Den. (panicle /sq m)	Red Grain Moisture (%)	Red Grain Yield (lb/A)
Control					88a	151a	17bc	65b	17.9ab	3565b
Embark 2S	e	16	oz p/A	MS	89a	148a	40ab	75a	16.5abc	3541b
Royal MH-30 SG	d	1.5	lb/A	DS	88a	154a	48a	71ab	18.1a	2996b
Newpath	e	4	oz p/A	PreFl	84b	128bc	0c	4c	15.1c	5418a
Newpath	e	4	oz p/A	PreFl	86ab	120c	0c	2c	15.1c	5846a
Newpath	e	4	oz p/A	PD						
Newpath	e	4	oz p/A	PreFl	86ab	126bc	0c	3c	15.2bc	6012a
Embark 2S	e	16	oz p/A	MS						
Newpath	e	4	oz p/A	PreFl	87ab	133b	0c	5c	14.9c	5872a
Royal MH-30 SG	d	1.5	lb/A	DS						
LSD (.05) =					3	10	24	7	2.6	560
Standard Dev. =					2.7573	8.3081	20.675	6.205	2.1987	474.44
CV =					3.17	6.07	137.83	19.48	13.64	9.99

Means followed by same letter do not differ significantly (Duncan's multiple range test, P=.05).

RED RICE STUDIES

R.T. Dunand and R.R. Dilly, Jr.

Experiment: Herbicide, Plant Growth Regulators, Crop Tolerance, and Red Rice Control/Suppression in Drill-Seeded CL161 Planted at a Low Seeding Rate

General Methodology: See South Unit (Red Rice) General Methodology (pg. 285)

Variety: CL161

Seeding Rate: 30 lb/A

Treatment(s): **Herbicide** – Newpath (4 fl oz/A) + 0.25% Agri-Dex

Plant Growth Regulator
Embark 2S (16 fl oz/A)
Royal MH-30 SG (2.5 lb/A)

Timing
Preflood (PreFl), 18 May
Panicle Differentiation (PD), 23 June
Milk Stage (MS), 3 Aug
Dough Stage (DS), 8 Aug

Pertinent Rainfall: No significant rain within 8 hr after foliar applications

Experimental Design: Randomized complete block and six replications.

Comments:

Plant Growth and Development

Crop and weed growth and development were evaluated at maturity, and red rice growth was significantly affected by herbicide and plant growth regulator treatments (Table 1). Mature plant height (distance from the soil surface to the tip of the panicle extended vertically) of CL161 ranged between 97 and 102 cm (control=101 cm). With red rice, mature plant height ranged between 127 and 149 cm in the herbicide and plant growth regulator treatments (control=147 cm). The plant growth regulator treatments alone had no effect on plant height. Due to the relatively moderate red rice infestation, lodging was variable, ranging from 0 to 47% and dependent on treatment. Treatments including Newpath applied preflood had no lodging, and the plant growth regulator treatments alone had 47% lodging (control = 5%). Red rice panicle density was reduced by all treatments containing Newpath applied preflood (1 to 6 panicles/m^2) compared with the control and Embark 2S and Royal MH-30 SG treatments alone (63 to 69 panicles/m^2).

Crop Production

Crop maturity and production were evaluated at harvest, and both were significantly affected by herbicide and plant growth regulators (Table 1). Grain moisture (an indicator of crop maturity) ranged between 17.5 and 19.5% with treatments including Newpath applied preflood, and grain moisture was 21.7 and 23.0% for Royal MH-30 SG and Embark 2S treatments alone, respectively (control = 19.1%). Grain yield (adjusted to 12% moisture) was generally higher with treatments including Newpath applied preflood (3824 to 4768 lb/A), and grain yield was lower with the plant growth regulator treatments alone (2848 to 2871 lb/A) compared with the control (3891 lb/A).

Table 1. The effects of herbicide and plant growth regulators on plant growth and crop production in CL161 drill-seeded at a low seeding rate. Rice Research Station, Crowley, LA. 2005.

Treatment Name	Fm Ds	Rate	Rate Unit	Grow Stg	CL161 Pl. Ht. (cm)	Red Pl. Ht. (cm)	CL161 Lodging (%)	Red Pan.Den. (pan./ sq m)	CL161 Grain Moisture (%)	CL161 Grain Yield (lb/A)
Control					101a	147a	5b	63a	19.1c	3891b
Embark 2S	e	16	oz p/A	MS	100ab	149a	47a	66a	23.0a	2848c
Royal MH-30 SG	d	1.5	lb/A	DS	102a	148a	47a	69a	21.7ab	2871c
Newpath	e	4	oz p/A	PreFl	98b	135b	0b	6b	18.8c	4167ab
Newpath	e	4	oz p/A	PreFl	99ab	133b	0b	1b	18.7c	4768a
Newpath	e	4	oz p/A	PD						
Newpath	e	4	oz p/A	PreFl	97b	127b	0b	3b	19.5bc	3824b
Embark 2S	e	16	oz p/A	MS						
Newpath	e	4	oz p/A	PreFl	99ab	131b	0b	3b	17.5c	4283ab
Royal MH-30 SG	d	1.5	lb/A	DS						
LSD (.05) =					3	11	27	11	2.3	747
Standard Dev.=					2.8123	8.9635	22.744	9.0295	1.948	631.6
CV =					2.83	6.47	161.91	30.00	9.86	16.59

Means followed by same letter do not significantly differ (Duncan's multiple range test, P=.05).

RED RICE STUDIES

R.T. Dunand and R.R. Dilly, Jr.

Experiment: Herbicide, Plant Growth Regulators, Crop Tolerance, and Red Rice Control/ Suppression in Drill-Seeded CL161 Planted at the Recommended Seeding Rate

General Methodology: See South Unit (Red Rice) General Methodology (pg. 285)

Variety: CL161

Seeding Rate: 90 lb/A

Treatment(s): **Herbicide** – Newpath (4 fl oz/A) + 0.25% Agri-Dex

Plant Growth Regulator
Embark 2S (16 fl oz/A)
Royal MH-30 SG (2.5 lb/A)

Timing
Preflood (PreFl), 18 May
Panicle Differentiation (PD), 23 June
Milk Stage (MS), 3 Aug
Dough Stage (DS), 8 Aug

Pertinent Rainfall: No significant rain within 8 hr after foliar applications

Experimental Design: Randomized complete block and six replications.

Comments:

Plant Growth and Development

Crop and weed growth and development were evaluated at maturity, and both rice and red rice growth were significantly affected by herbicide and plant growth regulator treatments (Table 1). Mature plant height (distance from the soil surface to the tip of the panicle extended vertically) of CL161 ranged between 96 and 104 cm (control = 102 cm). Newpath applied preflood followed by Embark 2S at the milk stage reduced plant height below the control. With red rice, mature plant height ranged between 130 and 133 cm for treatments including Newpath applied preflood (control=151 cm). The Embark 2S and Royal MH-30 SG treatments alone had no effect on plant height (151 and 157 cm, respectively). Due to the relatively moderate red rice infestation, lodging was variable, ranging from 0 to 37%. Treatments including Newpath applied preflood had 0% lodging, and Embark 2S and Royal MH-30 treatments alone had 15% lodging (control = 37%). Red rice panicle density was reduced by all treatments containing Newpath applied preflood (2 to 7 panicles/m^2) compared with the control and Embark 2S and Royal MH-30 SG treatments alone (58 to 68 panicles/m^2).

Crop Production

Crop maturity and production were evaluated at harvest, and both were significantly affected by the herbicide but not the plant growth regulators (Table 1). Grain moisture (an indicator of crop maturity) ranged between 16.9 and 17.4% with treatments including Newpath applied preflood, and grain moisture was 17.6 and 18.8% for Embark 2S and Royal MH-30 treatments alone, respectively (control = 19.2%). Grain yield (adjusted to 12% moisture) was highest with treatments including Newpath applied preflood (4427 to 5910 lb/A), and in general, grain yield was higher with the plant growth regulator treatments alone (3935 to 4212 lb/A) compared with the control (3518 lb/A).

Table 1. The effects of herbicide and plant growth regulators on plant growth and crop production in CL161 drill-seeded at the recommended seeding rate. Rice Research Station, Crowley, LA. 2005.

Treatment Name	Fm Ds	Rate	Rate Unit	Grow Stg	CL161 Pl. Ht. (cm)	Red Pl. Ht. (cm)	CL161 Lodging (%)	Red Pan.Den. (pan./ sq ft)	CL161 Grain Moisture (%)	CL161 Grain Yield (lb/A)
Control					102ab	158a	37a	68a	19.2a	3518e
Embark 2S	e	16	oz p/A	MS	101ab	151a	15ab	58a	17.6abc	4212cde
Royal MH-30 SG	d	1.5	lb/A	DS	104a	157a	15ab	66a	18.8ab	3935de
Newpath	e	4	oz p/A	PreFl	98bc	133b	0b	7b	17.4bc	4794bc
Newpath	e	4	oz p/A	PreFl	100abc	131b	0b	3b	17.4bc	5810a
Newpath	e	4	oz p/A	PD						
Newpath	e	4	oz p/A	PreFl	96c	130b	0b	4b	16.9c	4427bcd
Embark 2S	e	16	oz p/A	MS						
Newpath	e	4	oz p/A	PreFl	100abc	130b	0b	2b	17.4bc	5044b
Royal MH-30 SG	d	1.5	lb/A	DS						
LSD (.05)	=				4	9	24	14	1.6	738
Standard Dev.	=				3.5305	7.4155	20.011	11.637	1.3325	626.05
CV	=				3.53	5.25	210.12	39.29	7.48	13.81

Means followed by same letter do not differ significantly (Duncan’s multiple range test).

RED RICE STUDIES

R.T. Dunand and R.R. Dilly, Jr.

Experiment: Herbicide Timing and Red Rice Control/Suppression in Drill-Seeded CL161

General Methodology: See South Unit (Red Rice) General Methodology (pg. 285)

Variety: CL161

Seeding Rate: 90 lb/A

Treatment(s): **Herbicide** – Newpath (4 fl oz/A) + 0.25% Agri-Dex

Timing
Preflood (PreFl), 18 May
2, 4, 6, 8, 10, and 12 weeks postflood (PF+2, 4, 6, 8, 10, 12) - 2 and 16 June; 1, 14, 28 July; 11 Aug

Pertinent Rainfall: No significant rain within 8 hr after foliar applications

Experimental Design: Randomized complete block and seven replications.

Comments:

Plant Growth and Development

Crop and weed growth and development were evaluated at maturity, and both rice and red rice growth were significantly affected by time of herbicide application (Table 1). Mature plant height (distance from the soil surface to the tip of the panicle extended vertically) of CL161 ranged between 94 and 101 cm (control = 100 cm). Newpath applied 4 weeks postflood reduced plant height below the control (94 vs. 100 cm). The other postflood treatments and the preflood treatment had plant heights ranging from 97 to 101 cm. With red rice, mature plant height ranged between 129 and 142 cm for the preflood and 2, 4, 6, and 8 weeks postflood treatments (control=152 cm). Treatments at 10 and 12 weeks postflood had no significant effect on red rice plant height (152 and 146 cm, respectively). Due to the moderate to high red rice infestation, lodging was variable, ranging from 0 to 73%. Treatments including Newpath applied preflood and postflood at 4, 6, and 8 weeks had minimal lodging (0 to 4%). Treatments applied at 2 and 10 weeks postflood had intermediate lodging (27 and 31%, respectively), and Newpath applied at 12 weeks postflood resulted in lodging (75%) equivalent to the control (63%). Red rice panicle density was reduced by all treatments except Newpath applied at 12 weeks postflood. Red rice panicle densities were very low (0 to 3 panicles/m^2) with the preflood and 8 and 10 weeks postflood timings, moderate to intermediate (21 to 52 panicles/m^2) with the 2, 4, and 6 weeks postflood timings, and high (75 panicles/m^2) with the 12 weeks postflood timing and control.

Crop Production

Crop maturity and production were evaluated at harvest, and both were significantly affected by time of herbicide application (Table 1). Grain moisture (an indicator of crop maturity) ranged between 16.8 and 23.7%. The only treatment that matured early compared with the control was the preflood application of Newpath (16.8 vs 23.7%). The postflood treatments had grain moistures ranging between 21.8 and 23.7%. Grain yield (adjusted to 12% moisture) was high with the preflood treatment (5078 lb/A), intermediate (3171 to 3705 lb/A) with the 2, 4, and 6 weeks postflood treatments, and low (1689 to 2087 lb/A) with the 8, 10, and 12 weeks postflood treatments. Grain yield in the control was 2850 lb/A.

Table 1. The effects of time of herbicide application on plant growth and crop production in drill-seeded CL161. Rice Research Station, Crowley, LA. 2005.

Treatment Name	Fm Ds	Rate	Grow Stg	CL161 Pl. Ht. (cm)	Red Pl. Ht. (cm)	CL161 Lodging (%)	Red Pan.Den. (pan./ sq m)	CL161 Grain Moisture (%)	CL161 Grain Yield (lb/A)
Control				100abc	152a	63a	75a	23.7a	2850bc
Newpath	e	4	PreFl	97c	129c	0d	3d	16.8b	5078a
Newpath	e	4	PF+2	97c	142b	27bc	52b	21.8a	3705b
Newpath	e	4	PF+4	94d	138b	4cd	25c	22.1a	3322b
Newpath	e	4	PF+6	98bc	138b	0d	21c	22.8a	3171b
Newpath	e	4	PF+8	101a	141b	1cd	0d	23.5a	1689d
Newpath	e	4	PF+10	101ab	152a	31b	0d	22.1a	2087cd
Newpath	e	4	PF+12	99abc	146ab	73a	75a	23.7a	2083cd
LSD (.05) =				3	8	25	8	3.7	875
Standard Dev. =				2.8411	7.0592	22.859	7.5641	3.4509	809.83
CV =				2.89	4.96	91.44	24.21	15.65	27.01

Means followed by same letter do not differ significantly (Duncan's multiple range test, P=.05).

AQUACULTURE RESEARCH

ANNUAL SUMMARY OF ENVIRONMENTAL CONDITIONS AND CRAWFISH PRODUCTION

W.R. McClain and J.J. Sonnier

Table 1 contains the average weekly data for environmental conditions and crawfish catch, 2004 - 2005 season, crawfish research project, Rice Research Station, Crowley, LA. The catch consisted almost exclusively of red swamp crawfish (*Procambarus clarkii*). The production summary is composed of averages across all experimental plots and treatments.

Pond History: Ponds were fallow for a period of 10 months following the previous crawfish season of 2003-2004. Rice crops were planted in May 2004, and fields were stocked with brood crawfish at rate of 60 lb/A on 25 June 2004. Two experimental ponds were additionally stocked with crawfish hatchlings (22,676 per acre) 2 Nov - 23 Nov, 2004.

Soil Type: Crowley silt loam

Water Source: Groundwater

Pond Area: Twelve 1-acre ponds

Forage Crops: Rice, variety 'Cocodrie,' was drilled seeded at 157 lb/A on 11 May 2004 in 10 fields. Two additional fields were drilled planted at the same rate with six commercial rice varieties (within plots), consisting of Bengal, Pirogue, Cheniere, Francis, Cocodrie, and Cypress. Grain was harvested in all fields by rice combine on 11 Sept. 2004, and the ratoon crops were managed as forage for crawfish production.

Permanent Flood Date: 7 Oct 2004

Trap Type: 3-funnel pyramid trap; ¾-inch square mesh wire

Bait Used: Manufactured (*Cajun World*, Purina Mills, Inc., St. Louis, MO; Southern Pride, Country Acres Feed, Inc., Brentwood MO; or fish (heron)

Crawfish Harvest: 10 to 22 traps/A, 8 Mar - 14 June 2005 (48 total trapping days for an average of 816 total trap-sets/A)

Crawfish Grades: Harvested crawfish were subjected to a grader (passive, water type) and sorted into three size-grade categories as follows: "Large" - ≤ 15 count/lb, "Medium" - 16-21 count/lb, and "Small" - > 21 count/lb

Table 1. Annual environmental conditions and crawfish production (averaged or totaled weekly). Rice Research Station, Crowley, LA. 2001-2002.

Weeks	Soil Temp.[1] Min.	Soil Temp.[1] Max.	Air Temp. Min.	Air Temp. Max.	Water Temp. Min.	Water Temp. Max.	Avg. D.O.[2]	Total Rainfall	Large Crawfish Count	Crawfish Harvest	Crawfish Size	Total Trapsets
	----------deg. F----------						(mg/L)	(inches)	(#/trap)	(lb/A)	(cnt/lb)	(#/A)
June 1-5	78.8	85.2	71.6	88.4				0.62				
June 6-12	78.0	84.6	73.4	89.9								
June 13-19	79.3	86.3	72.0	88.0				2.32				
June 20-26	78.9	85.0	72.7	85.7				8.64				
June 27-July 3	77.4	82.9	73.0	86.3				2.78				
July 4-10	77.3	85.6	72.9	87.3				1.18				
July 11-17	80.6	92.4	75.6	91.4				0.42				
July 18-24	80.9	82.9	72.4	92.9								
July 25-31	84.1	95.0	73.6	91.1				0.18				
Aug 1-7	80.1	83.3	74.1	92.7				2.88				
Aug 8-14	81.0	82.3	67.4	88.0								
Aug 15-21	79.4	93.1	67.4	88.3								
Aug 22-28	83.0	93.1	74.9	92.7								
Aug 29-Sept 4	78.3	88.0	68.9	88.3								
Sept 5-11	79.4	89.0	70.0	91.6								
Sept 12-18	79.4	90.9	71.1	91.6								
Sept 19-25	79.0	86.9	68.7	89.4				0.24				
Sept 26-Oct 2	73.9	80.3	63.3	85.3				0.68				
Oct 3-9	76.0	80.0	69.0	83.6				5.43				
Oct 10-16	72.7	76.6	60.4	78.9	20.5	26.3		1.75				
Oct 17-23	74.6	80.7	72.3	86.1	24.5	29.0	0.32					
Oct 24-30	75.3	84.0	68.1	86.3	24.1	28.2	0.62					
Oct 31-6	67.4	75.0	58.4	75.1	19.4	23.2	0.90	2.77				
Nov 7-13	60.7	70.6	50.3	74.7	16.5	20.5	2.63	0.40				
Nov 14-20	63.3	68.9	58.3	68.4	17.4	20.5	2.91	1.70				
Nov 21-27	62.0	69.9	53.9	70.1	16.9	20.3	0.86	4.12				
Nov 28-Dec 4	52.7	63.3	41.4	64.4	12.8	16.0	3.98	0.94				
Dec 5-11	59.0	67.7	52.6	70.1	16.0	18.6	3.91	1.33				
Dec 12-18	49.9	59.6	37.0	58.4	9.7	13.0						
Dec 19-25	47.5	57.0	35.8	59.7	8.0	10.9		1.45				

Continued.

Table 1. Continued.

Weeks	Soil Temp.[1] Min.	Soil Temp.[1] Max.	Air Temp. Min.	Air Temp. Max.	Water Temp. Min.	Water Temp. Max.	Avg. D.O.[2]	Total Rainfall	Large Crawfish Count	Crawfish Harvest	Crawfish Size	Total Trapsets
	----------deg. F----------						(mg/L)	(inches)	(#/trap)	(lb/A)	(cnt/lb)	(#/A)
Dec 26-Jan 1	45.8	55.0	40.2	65.3	9.8	12.6						
Jan 2-8	60.3	64.6	56.7	72.4	16.0	19.5	2.14	0.20				
Jan 9-15	58.9	64.7	49.0	68.4	13.4	17.2	3.18	1.80				
Jan 16-22	49.7	56.0	35.9	58.0	8.8	13.6	11.14					
Jan 23-29	52.1	59.6	35.7	61.3	9.2	14.2		0.58				
Jan 30-Feb 5	53.3	55.5	46.2	57.8	8.3	10.6		3.66				
Feb 6-12	54.3	58.7	40.3	55.3	12.8	16.0	7.29	0.30				
Feb 13-19	61.0	67.0	53.5	72.3	14.6	19.2	4.85	2.90				
Feb 20-26	60.8	66.0	54.3	69.8	14.9	19.1	1.17	3.74				
Feb 27-Mar5	56.5	61.0	43.5	59.5	11.9	17.6	8.82	0.70				
Mar 6-12	57.8	63.3	44.5	65.0	13.9	19.2	7.24	0.40	27.2	30.54	15.1	51
Mar 13-19	54.8	58.3	47.5	59.5	11.8	17.4	9.48	0.63	20.0	24.35	14.0	51
Mar 20-26	61.0	68.7	54.0	74.7	18.2	24.0	3.46	0.34	23.1	31.02	12.7	51
Mar 27-Apr 2	61.6	70.6	55.6	72.4	15.8	22.7	5.61	0.45	23.6	33.18	12.1	51
Apr 3-9	63.1	71.4	53.6	75.3	17.3	24.4	5.06	0.32	23.3	33.69	11.7	51
Apr 10-16	65.1	73.0	55.4	77.3	17.7	24.4	3.35	0.36	22.1	33.58	11.2	51
Apr 17-23	69.3	79.3	60.0	81.0	19.5	27.2	4.05		37.3	54.69	11.6	51
Apr 24-30	66.4	76.3	57.1	77.7	17.7	25.1		0.66	37.5	53.75	11.9	51
May 1-7	65.0	77.1	54.1	75.9	15.8	25.6	6.48	0.20	30.8	36.42	11.3	68
May 8-14	73.3	83.4	65.7	85.4	22.4	31.0		0.14	28.7	52.75	11.4	51
May 15-21	75.9	87.7	64.6	86.6	22.4	31.3			24.6	36.13	11.6	68
May 22-28	82.6	89.9	71.4	92.7	24.5	32.2			15.6	22.82	11.6	51
May 29-June 4	77.4	82.6	70.3	85.7	24.3	31.3		1.40	20.4	29.14	11.9	68
June 5-11	77.3	86.3	71.0	90.4	25.2	33.6		3.44	24.5	33.73	12.3	68
June 12-18	81.0	93.7	74.0	94.4	25.7	31.1		0.22	8.1	11.26	12.2	34
June 19-25	80.7	96.0	72.1	92.4	24.7	26.1						
								58.61[3]		**517.05**		**816**

[1] Soil temperature was measured at a depth of 4 inches.
[2] Dissolved oxygen readings were taken about 8:00 a.m.
[3] Rainfall total is for 1 year only (June 1, 2004 - May 31, 2005) and does not include additional rainfall for the extended harvest period (June 2004).

EFFECTS OF TRAP DENSITY ON CRAWFISH YIELD IN A RICE-CRAWFISH FIELD ROTATIONAL MANAGEMENT SYSTEM

W.R. McClain, R.P. Romaire, and J.J. Sonnier

INTRODUCTION

During the early history of crawfish farming, many styles and sizes of traps were used by crawfish farmers, and all caught crawfish with varying degrees of efficiency. Presently, the "pyramid trap," with three entrance funnels has become the industry standard. For years, most traps were made from ¾-inch mesh, plastic-coated hexagonal-shaped (hex) poultry wire (19 or 20 gauge). These mesh-sizes typically retain crawfish of minimum marketable size, about 3 inches and longer (35 count per pound). Although hex mesh wire traps are still used in the industry, in recent years, traps made of ¾-inch welded square mesh wire have come to dominate new trap sales. Farmers are typically replacing worn hex mesh traps (and expanding into additional acreage) with the new square mesh crawfish traps. Traps made of square mesh wire are more durable and have a longer useful life.

One other difference between the hex and square mesh configured traps is that the square mesh typically retains smaller crawfish because of the differences in geometrical shapes of the trap mesh and that of crawfish. Retaining smaller crawfish can potentially increase the overall yield in a pond but also may be a problem for buyers and processors if the proportion of small crawfish in the catch becomes too great. One preliminary study at the Rice Research Station in 2003 indicated that traps of ¾-inch square mesh design were more efficient than traps constructed of ¾-inch hex mesh; however, the increase in catch per unit effort involved an increase in crawfish of each size category – not just the smaller size class. That study also found that overall yield was increased, on average, by 39% with the ¾-inch square mesh traps.

In another preliminary study at the Rice Research Station in 2004, at an average annual yield of 623 lb of crawfish/A, there was no significant difference between a trap density of 18 and 24 square mesh traps per acre.

Because of the apparently higher catch efficiency of the square-mesh trap, current harvest recommendations on trap density based on conventional hex mesh traps may no longer be valid. Based on over a decade of research in well-managed ponds producing in excess of 1,000 lb/A, 20 to 24 hex-mesh traps/A were found to be the most efficient and economical trap density. Potentially, fewer traps of the square-mesh design with less bait and labor may be used to achieve optimum yield and with a significant savings in harvesting cost and increased profit for farmers, since harvesting constitutes the highest variable cost (50-70% of total operating costs) for crawfish producers. Trap density and trap catch efficiency are major determinants in bait use and cost. Refinement of trap density has potential to reduce bait and labor costs, increase harvest size, and increase production efficiency. Therefore, this study was conducted to obtain additional data with regard to density of the square-mesh trap under a typical rice-crawfish field rotational strategy.

Pond History: Ponds were fallow for 10 months following a previous crawfish season. Rice crops were planted in May 2004, and fields were stocked with brood crawfish and managed to simulate commercial rice/crawfish rotational systems typical to the region.

Soil Type: Crowley silt loam

Pond Area: Nine 1-acre ponds

Forage Crop: Rice (variety 'Cocodrie') was drill seeded at 157 lb/A on 11 May 2004. Grain was harvested on 11 Sept 2004, and the ratoon forage crop was managed for crawfish production.

Fertilizer: Main Crop: 8-24-24 at 250 lb/A preplant incorporated; 46-0-0 at 100 lb/A (topdress) on 10 June 2004; Ratoon Crop: 46-0-0 at 150 lb/A (topdress) on 14 Sept

Herbicide: Basagran at 1.5 pt/A and Stam at 1 gal/A on 1 June. Ricestar (fenoxyprop) at 15 oz/A on 21 June

Insecticide: None, an armyworm infestation was controlled by temporary raising the flood depth

Stocking Rate: 60 lb/A from 11 June - 30 June 2004

Permanent Flood Date: 7 Oct 2004

Feed: None

Trap Type and Density: 3-funnel pyramid trap constructed of ¾-inch square mesh wire, at 10, 16, or 22 traps/A. Trap density constituted the experimental treatments.

Bait Used: Manufactured [Cajun World, Purina Mills, Inc., St. Louis, MO; Southern Pride, Country Acres Feed, Inc., Brentwood, MO; or fish (heron)]. Bait type and amounts were consistent across experimental treatments daily.

Crawfish Harvest: 8 Mar - 14 June 2005 for a total of 47 baited trapping days (470, 752, or 1034 total trap-sets/A)

Crawfish Grades: Harvested crawfish were subjected to a grader (passive, water type) and sorted into three size-grade categories as follows: "Large" - <15 count/lb, "Medium" - 15-21 count/lb, and "Small" - > 21 count/lb

Exp. Design: Completely randomized design (three replications per treatment)

Parameters: Crawfish catch, by size category, was documented daily for each pond, and sub-samples were assessed weekly for size count and used to estimate total number of crawfish harvested. Crawfish catch per unit effort (CPUE) was also determined.

Statistical Analysis: Analysis of variance

Support: USDA Special Grants – Aquaculture

Comments: Average annual crawfish yield in this study was 531 lb/A – a typical yield for rice-crawfish field rotational systems of production, the most common production system in Louisiana. Under the conditions of this study, overall yield did not differ significantly among the different trap density treatments (Table 1). Total yields ranged from 509 to 593 lb/A for a density of 10 traps/A, 492 to 646 lb/A for a density of 16 traps/A, and 410 to 645 lb/A for a density of 22 traps/A. There were also no significant differences associated with yield within a grade category, size at harvest, or total number of animals harvested. However, catch efficiency associated with the different trap density treatments differed significantly. CPUE was significantly increased as trap density decreased. This explains the lack of differences in overall yield when total trap sets/A (number of traps/A x 47 harvest days) was drastically reduced from 1034 to 470 sets/A for the season.

One might expect, though, that CPUE would be greater in ponds with lower trap densities toward the end of the harvesting season because of a presumed "build-up" of the harvestable population due to reduced trapping effort. However, this does not appear to be the case in this study. CPUE was consistently greater in the lower trap density treatments from early on (Figure 1). Increased CPUE throughout the study in the lower trap density treatments aptly compensated for the fewer traps per pond.

These findings, if corroborated, that total crawfish yield was not increased by increasing trap density above 10 traps/A (because of a corresponding decrease in CPUE) could have substantial benefits for pond managers. Trap densities above the optimum for a given situation would unnecessarily increase both the investments in traps and operating expenses (bait, labor, etc.) associated with trap lifts. It should be noted that although densities of ¾-inch square mesh traps above 10/A in this study, at total annual yields ranging from 410 to 646 lb/A, were not justified, this will likely not hold true for different situations, especially in culture systems with greater crawfish densities. Therefore, additional research is needed to more precisely match trap density and harvesting effort with production system and pond crawfish densities. In short, though, this study provides important preliminary information pertaining to lower trap density recommendations for field rotational production systems with modest crawfish densities and yield.

Table 1. Comparisons of yield (total and by grade category), size at harvest (by grade), total crawfish harvested, and catch per unit effort (CPUE) for crawfish ponds harvested using different densities of ¾-inch square mesh traps. Yields (total and by grade), size at harvest, and total crawfish harvested were not significantly different (P>0.05) among trap density treatments; however, CPUE significantly differed (P<0.05) among treatment. Rice Research Station, Crowley, LA. 2005.

Treatment	Tot. Yield (lb/A)	Yield by Grade[1] (lb/A)			Size by Grade[1] (cnt/lb)			Tot. CF/A (# Caught)	CPUE (lb)
		1	2	3	1	2	3		
Trap Density Trial									
10 traps/A	538	408	108	22	10.0	14.9	22.7	6192	1.14[A]
16 traps/A	548	412	106	31	10.4	15.8	23.3	6679	0.73[B]
22 traps/A	506	377	98	31	10.4	15.0	23.8	6101	0.49[C]

[1] Crawfish that fall into the size grade categories 1, 2, and 3 are considered large, medium, or small, respectively.

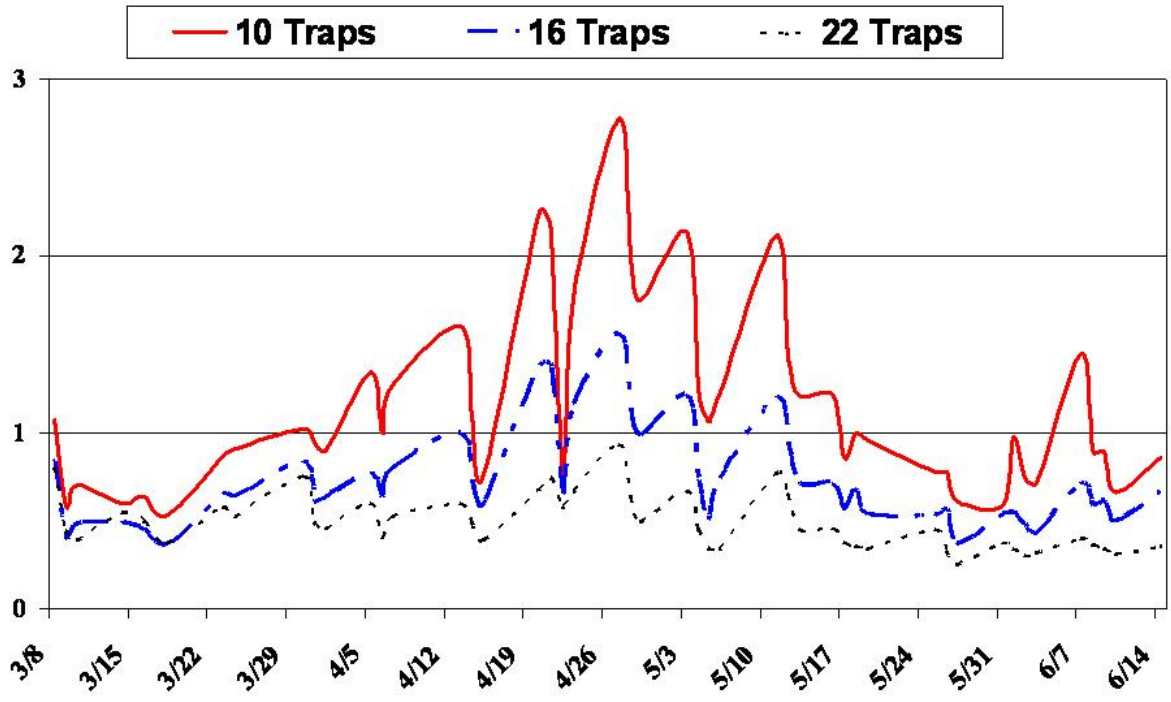

Figure 1. Average catch per unit effort (CPUE) for experimental treatments of 10, 16, or 22 traps/A over the course of a harvest season in a simulated rice-crawfish rotational system of production. Rice Research Station, Crowley, LA. 2005.

EVALUATION OF A NOVEL APPROACH TO ESTIMATE ANNUAL CRAWFISH YIELD

W.R. McClain and J.J. Sonnier

INTRODUCTION

Crawfish farming is the largest crustacean aquaculture industry in North America, largely located in Louisiana, with more than 70 million pounds harvested annually by about 1,300 producers farming in excess of 130,000 acres. Unlike most other forms of aquaculture, crawfish production relies solely on natural reproduction and recruitment from free ranging adults. This subjects the grower to great variations in yield and harvest size due to large variations in adult survival and reproductive success from year to year and pond to pond. Not only are yield and size variation problems because of variations in recruitment patterns, but these problems are exacerbated by a lack of predictability and a reliable means of assessing pond inventory. Currently, there is no dependable means of estimating annual yield until the commercial harvest is well underway. This inability to estimate yield potential, and thus cash flow, hinders producers from investing necessary funds for capital improvement and even contributes to underfunding of necessary operating expenditures, which exacerbates the problem of production variability and contributes to other problematic aspects such as marketing.

Production variability and unpredictability are greatest in rice-crawfish field rotational systems of production because of the inherent unreliability of introduced broodstock (largely because of harvesting and handling stresses). This production strategy is now used in a majority of the crawfish acreage in Louisiana. Previous efforts to establish population sampling protocols in crawfish ponds as a predictor of yield were largely ineffective in both monoculture ponds and rice-crawfish rotational ponds. Because no reliable method has been developed to accurately sample ponds or predict production yields, this project was initiated to investigate a novel approach. The relationship between crawfish broodstock emergence and annual yield was examined. This research project was limited to the field rotational approach.

Pond Information: Ponds used for this study were those nine experimental ponds employed in the previous study "***Effects of Trap Density on Crawfish Yield in a Rice-Crawfish Field Rotational Management System*"** by McClain, Romaire, and Sonnier. Pond history and conditions are described in detail within that report. Experimental treatments of that study did not interfere or impede with this project.

Pond Area: Nine 1-acre ponds

Levees: Pond levees were constructed prior to planting of rice in May 2004 and were not renovated thereafter

Stocking Rate and Date: Red Swamp crawfish were stocked from adjacent ponds 11 June - 30 June 2004 at a rate of 60 lb/A

Permanent Flood Date: 7 Oct 2004

Exp. Protocol: The interior and top surfaces of perimeter levees of each pond were systematically examined for signs of crawfish emergence, which was enumerated monthly per pond. Levees were checked after each rainfall exceeding 0.25 inches or weekly. Crawfish emergence was assumed when a freshly opened burrow was discovered. Levees were checked shortly after establishment of the permanent flood to the end of February. Emergence was enumerated for each pond, and the average was used to compute harvest yield per opened burrow based on average total crawfish yield.

Parameters: Crawfish emergence, rainfall, and crawfish yield (from previous study)

Support: USDA Special Grants – Aquaculture

Comments: Because crawfish yield, by weight or number, did not significantly differ in ponds used for this study even though the density of traps varied (see previous report), it was assumed that the trap density treatments would have little effect with regard to determining the relationship of burrow emergence and crawfish yield in this study. Therefore, the relationship between enumerated crawfish broodstock emergence from summer burrows and annual

crawfish yield was made to examine the possibility that a novel method exists for predicting yield before harvesting commences. Although evidence of crawfish emergence (as determined by observing freshly opened burrows) varied somewhat by pond, most of the variation occurred by month (Table 1). This is to be expected and was positively correlated (r=0.779) with total monthly rainfall. Because of similar crawfish yields among the ponds and the relatively small variations in total number of burrow openings for the 5-month period, correlation coefficients for the number of openings and crawfish yield were low. Therefore, average data was used to examine the relationship between burrow openings and crawfish yield.

According to this relationship under the conditions of this study, 18.9 pounds of crawfish (or 226 individuals) were ultimately harvested per burrow opening observed (Table 2). To examine the feasibility of such an assumption, real data from this and other studies were used in a hypothetical scenario. A subsample of the same cohorts of these females that presumably exited the burrows with young in this study were previously collected prior to burrowing and allowed to spawn in the lab. The average number of offspring that were hatched in the lab was 413 per female. Assuming a similar rate of fecundity from females that emerged in ponds, the projection of 226 young-of-the-year (YOY) crawfish harvested per opened burrow equates to 54.7% of those that presumably exited the burrow. This seems realistic because not all YOY will survive and not all surviving crawfish will be harvested. Given an assumed survival of offspring from hatching to harvest of 70% under good conditions and an assumed harvest efficiency rate of 80% based on actual preliminary data from other studies, these equate to 56% YOY harvested per female, almost exactly that of our theoretical derivative of 54.7% from this study. Thus, if corroborated with further studies, it may be possible to refine this novel approach into a tool to be used by pond managers for predicting crawfish yield early in the season by simply enumerating freshly open burrows per linear feet of levee. This deserves further study.

Table 1. Annual crawfish yield (by weight and number of crawfish harvested) and corresponding numbers of opened burrows observed (by month) from levees bordering each pond. Total rainfall and total number of burrow openings observed by month provided the basis for determining the correlation between rainfall and crawfish emergence. Rice Research Station, Crowley, LA. 2005.

Pond	Trap Density	Yield[1] (lb/A)	Yield[1] (CF/A)	Number of Burrow Openings by Month					Total Openings Per 1-Acre Pond
				Oct	Nov	Dec	Jan	Feb	
1	10	596	6803	4	11	3	5	5	28
2	10	512	5901	6	17	0	1	4	28
3	10	512	5957	10	13	1	2	7	33
4	16	509	6056	8	16	0	3	5	32
5	16	649	8233	7	10	2	1	2	22
6	16	494	5848	5	5	1	0	10	21
7	22	467	5483	8	15	0	3	3	29
8	22	648	7467	7	15	1	5	9	37
9	22	413	5477	9	6	7	3	8	33
Average Number of Burrow Openings per Acre									**29.2**
Total No. Burrow Opening per Month				64	108	15	23	53	
Total Rainfall per Month (inches)				7.18	9.31	3.40	3.28	10.30	
Correlation Coefficient				**0.7793**					

[1] Derived from study "***Effects of Trap Density on Crawfish Yield in a Rice-Crawfish Field Rotational Management System***" summarized in this report above.

Table 2: Estimated crawfish yield per burrow, based on average number of observed burrow openings and the average annual harvest[1] from experimental ponds, and a theoretical estimate for the percentage of young-of-the-year crawfish to reach the harvest. Rice Research Station, Crowley, LA 2005.

	Weight (lb) of Crawfish		**Number of Crawfish**	
	Avg.	Range	Avg.	Range
Crawfish Yield[1] (per acre)	533	413 - 649	6358	5477 - 8233
No. burrow openings[2] (per acre)	Avg. = 29.2 (Range = 21 – 37)			
Corresponding yield[3] (per burrow)	**18.9**	12.5 - 29.5	**226**	166 - 374
A Hypothetical				
Avg. No. young per brood female[4]	413			
Corresponding No. crawfish per burrow[3]	**226**			
Theoretical[5] percentage harvested	**54.7 %**			

[1] Derived from the study "***Effects of Trap Density on Crawfish Yield in a Rice-Crawfish Field Rotational Management System***" summarized in this report above.
[2] Derived from this study.
[3] Derived from calculations based on previous study and enumerated burrow openings of this study.
[4] Derived from the study "**Evaluation of Selected Aspects of Crawfish Reproduction with Implications for Affecting Production**" by McClain, Romaire, and Sonnier in Ann. Res. Rpt., Rice Res. Stn., La. Agri. Exp. Stn., L.S.U. Agricultural Center, 96:309-310, based on number of offspring hatched per female cohort in simulated burrows.
[5] Theoretical percentage of offspring to have emerged from burrows and entered the harvest.

SUPPLEMENTAL STOCKING OF CRAWFISH HATCHLINGS IN PONDS: A PRELIMINARY OBSERVATION

W.R. McClain and J.J. Sonnier

INTRODUCTION

Formulated feeds are not used and hatcheries are not employed in the Louisiana crawfish culture industry. Nutritional needs are met from a dynamic food web, fueled by stands of vegetation. Production depends on natural recruitment from indigenous or introduced broodstock and not by intentional stocking of known numbers of hatchlings as occurs in many other aquaculture enterprises. Recruitment of young is highly variable and depends on the survival and fecundity of broodstock following a long burrow occupation (summer) and on weather and environmental conditions after emergence. Recruitment patterns largely dictate yield and size of harvested animals, which vary widely. Though imprecisely documented, high yields of small crawfish are usually a result of overcrowding, and low yields of large crawfish are often associated with low population densities. However, the impacts and outcomes associated with even general estimates of the numbers of young-of-the-year (YOY) recruits have not been possible because of the lack of technologies/techniques to assess population density accurately.

Anecdotal evidence and research findings have long determined that crawfish ponds managed as typical rice-crawfish field rotational systems (as opposed to single-crop crawfish systems in permanent locations) are usually associated with lower densities and more uniform cohorts. This is most likely the result of fewer surviving broodstock and more synchronized reproduction. Therefore, experimental ponds managed as rice-crawfish crop rotational systems employing a field rotation approach, with their lower densities of YOY recruits, should make for a more acceptable platform to evaluate the impacts of additional introductions of recruits on subsequent crawfish production. Therefore, this study was conducted to observe the effects of known numbers of supplemental recruits to crawfish ponds during the typical fall recruitment period.

Pond History: Ponds were fallow for 10 months following a previous crawfish season. Rice crops were planted in May 2004, and fields were stocked with brood crawfish and managed to simulate commercial rice/crawfish rotational systems typical to the region.

Soil Type: Crowley silt loam

Pond Area: Five 1-acre ponds

Forage Crop: Rice, variety 'Cocodrie' (or combinations of Bengal, Pirogue, Cheniere, Francis, Cocodrie, and Cypress), was drilled seeded at 157 lb/A on 11 May 2004. Grain was harvested in all fields by rice combine on 11 Sept 2004, and the ratoon crop was managed as forage for crawfish production.

Fertilizer: Main Crop: 8-24-24 at 250 lb/A preplant incorporated; 46-0-0 at 100 lb/A (topdress) on 10 June 2004; Ratoon Crop: 46-0-0 at 150 lb/A (topdress) on 14 Sept

Herbicide: Basagran at 1.5 pt/A and Stam at 1 gal/A on 1 June; Ricestar (fenoxyprop) at 15 oz/A on 21 June

Insecticide: None, an armyworm infestation was controlled by temporary raising the flood depth

Permanent Flood Date: 7 Oct 2004

Stocking Rate: Broodstock was introduced into the rice crop at 60 lb/A from 11 June - 30 June 2004. Supplemental stocking of Stage 3 hatchlings (**Supplemental Stocking** treatment) or no supplemental stocking (**Non-Supplemental Stocking** treatment) constituted the experimental treatments in this study. Juvenile introductions occurred on eight occasions from 11 Oct to 16 Nov 2004 for a mean total of 22,676 supplemental hatchlings/A (or 5.6/m^2).

Feed: None

Trap Type and Density: 3-funnel pyramid trap constructed of ¾-inch square mesh wire at 22 traps/A

Bait Used: Manufactured [Cajun World, Purina Mills, Inc., St. Louis, MO; Southern Pride, Country Acres Feed, Inc., Brentwood, MO; or fish (heron)]. Bait type and amounts were consistent across experimental treatments daily.

Crawfish Harvest: 8 Mar - 14 June 2005 for a total of 48 trapping days (1056 total trap-sets/A)

Crawfish Grades: Harvested crawfish were subjected to a grader (passive, water type) and sorted into three size-grade categories as follows: "Large" - < 15 count/lb, "Medium" - 15-21 count/lb, and "Small" - > 21 count/lb

Exp. Design: Randomized design with two replications of the supplemental stocking treatment and three replications of the control (non-supplemental stocking) treatment

Parameters: Crawfish catch, by size category, was documented daily for each pond, and sub-samples were assessed weekly for size count and used to estimate total number of crawfish harvested. Crawfish catch per unit effort (CPUE) was also determined.

Statistical Analysis: General linear model

Comments: Average total yield in this study was increased 9% with the supplemental stockings, but this was not a statistically significant increase (Table 1). Likewise, the slight increase observed in total number of crawfish harvested or in CPUE was not statistically significant. Only in size Grade 2 (medium size class) was there a significant difference in yield observed, but the actual increase in weight, when compared with the overall yield, was small.

Perhaps the most puzzling aspect of this study was that even though 22,676 additional crawfish were stocked per acre into the experimental fields as hatchlings (or 5.6 hatchlings/m^2), only 769 (or 0.19/m^2) more animals were harvested from those fields when compared with the controls. This represents a presumed return of about 3.4% of the stockers, for a 9% increase in yield. It is unclear why, with 1.52 crawfish/m^2 harvested from the control ponds and almost 3.7 times that number of supplemental recruits stocked in the supplemental stocking treatment, an increase of only 0.19 harvest crawfish/m^2 was observed in that treatment. Cannibalism is the suspected cause for the apparent low survival of recruits because, although survival due to handling/stocking was not specifically assessed in this study, problems with hatchling survival due to handling and transfer in this lab have not been observed previously.

If cannibalism is indeed the major cause for the extremely low survival, this brings to question how some ponds can seemingly become overpopulated so frequently. These questions warrant further investigation.

Table 1. Comparisons of yield (total and by grade category), size at harvest (by grade), total crawfish harvested, and catch per unit effort (CPUE) for crawfish ponds with and without supplemental stocking of juvenile crawfish. Significant differences, indicated by ***S*** for significant ($P \leq 0.05$) or ***NS*** for non-significant ($P > 0.05$), and the percentage increase are noted below each applicable comparison. Rice Research Station, Crowley, LA. 2005.

Treatment	Tot. Yield (lb/A)	Yield by Grade[1] (lb/A)			Size by Grade[1] (cnt/lb)			Tot. CF/A (# Caught)	CPUE (lb)
		1	2	3	1	2	3		
Non Supplemental	509	379	99	31	10.4	15.0	23.8	6142	0.49
Supplemental[2]	555	391	124	40	10.3	15.8	23.0	6911	0.54
% Increase	***9.04***	***3.17***	***25.3***	***29.0***				***12.5***	***10.2***
	NS	***NS***	***S***	***NS***				***NS***	***NS***

[1] Crawfish that fall into the size grade categories 1, 2, and 3 are considered large, medium, or small, respectively.
[2] 22,676 juveniles per acre (or 5.6 hatchlings/m^2) were stocked after flood-up.

COMPARISONS OF EXPERIMENTAL AND COMMERCIAL BAITS FOR COOL WATER CRAWFISH HARVEST

W.R. McClain, R.P. Romaire, and J.J. Sonnier

INTRODUCTION

Nearly 50 to 60% of the harvest effort in crawfish ponds occurs from late November through mid-March, a time when water temperatures are low and bait needs are met almost solely by "fresh-frozen" fish baits, mainly menhaden and gizzard shad. Crawfish farmers and fishermen use fresh or fresh-frozen fish for crawfish bait in cooler water (<66°F) – not by choice, but by necessity. Manufactured baits are far less expensive and require no refrigerated storage or further processing. However, the low catch with current commercially available formulated crawfish baits in cool water (usually two to four times lower than fish baits) generally does not justify their use until waters warm and vegetative food resources begin to deplete in late March-early April. The price of fish bait ($600 to $680/ton) is nearly double that of manufactured baits and, notwithstanding the higher price for fish bait, locally available fish species are often in short supply, necessitating the shipments of other species into Louisiana from as far away as the Great Lakes and upper East Coast.

The high cost and erratic supply of typical fish baits have led some to experimenting with manufactured bait products and formulations for use in cool water crawfish trapping. Some of these baits have appeared on the market without published test results. Other companies are in the early stages of testing. One company is experimenting with formulations using a molasses-based bait product. This project received a small sample of the test baits for preliminary testing under realistic conditions in commercial ponds. The formulations are proprietary and were unknown to the testers. These small-scale trials also provided for a means to test and make preliminary comparisons of some commercial brands of formulated baits currently marketed for use in cool water.

Pond Area: Two commercial crawfish ponds in Acadia Parish, Louisiana, managed as typical rice-crawfish field rotational production systems, were used for this study (separate ponds for each trial).

Experimental Period: Traps in Trial 1 were baited on Jan 24, 2005, and assessed after 24 hours. Traps in Trial 2 were baited (with the exception of a non-baited control) on Feb 14, 2005, and checked after 19 hours.

Objective: To compare crawfish catch of two experimental test baits with commonly used and accepted formulated (commercially manufactured) crawfish baits and a typical fish used for bait in cool water.

Baits: The test baits are of proprietary and experimental formulations using molasses as the base. Formulations differ slightly for test baits A and B. The commercial baits were chosen because of their common use and acceptance in the industry (although not always for use in cool water). Because no endorsement or recommendation is meant to be implied by these results, the commercial baits are simply referred to as brands X and Y. The fish used for one of the control treatments was frozen menhaden (or pogy), an industry standard for cool water trapping for decades. Approximately ⅓-pound of bait portions per trap was used for all treatments.

Traps: ¾-inch square-mesh pyramid crawfish traps

Experimental Protocol: A randomized complete block design was used, with the blocking factor being the location within a pond. Ten and seven replications per bait treatment were used for trials 1 and 2, respectively. Traps soak (or set) intervals were 24 and 19 hr, respectively. All traps were emptied of crawfish prior to baiting, and crawfish catch per day per treatment was averaged for the various parameters assessed.

Parameters: Crawfish yield (in numbers of crawfish caught per trap), catch per unit effort (CPUE, in pounds of crawfish caught per trap), and average size of crawfish harvested (in crawfish count per pound)

Support: Louisiana Crawfish Promotion and Research Board and an unrestricted corporate gift

Comments: Results, by trial, for the various baits tested in water temperatures below 66°F are presented in Table 1. Because of the limited number of observations and large variability within reps, a statistical analysis was not conducted on the data set. However, one obvious trend is apparent -- in cooler water early in the harvest season, no bait compared favorably with fish. On average, fresh menhaden caught twice as many crawfish as the best of the formulated baits. Comparisons to non-baited trap sets in Trial 2 indicate that, although formulated baits in general did not perform as well as fish, the formulated baits appeared to be providing some amount of attraction under these conditions. The test baits A and B appeared to have a slight edge over the commercial brands tested, but this cannot be confirmed with such limited data. Also, Bait B seemed to have a slight edge over Bait A, but again this is not certain. It was noticed upon receipt of the bait shipments that Bait A was more brittle and most pieces had broken into several smaller pieces, whereas Bait B mostly remained intact. This may have had some influence on trap yields. Average size of crawfish harvested was little affected by bait type with the exception of the non-baited traps, which showed slightly smaller harvested crawfish. In short, this study has corroborated every similar effort to examine formulated baits for efficacy in cool waters – no formulated bait yet appears to be as effective as fresh fish in attracting crawfish to traps in water temperatures below 60 to 65°F.

Table 1. Average crawfish catch, expressed in numbers of crawfish caught per trap, CPUE (catch per unit effort, lb/trap), and average size of harvested crawfish (count/lb) for various bait treatments. Test baits A and B are experimental formulations, Brands X and Y are currently available commercial baits ("winter formulation"), and fish was frozen menhaden. Rice Research Station, Crowley, LA. 2005.

	Test Bait A	**Test Bait B**	**Brand X**	**Brand Y**	**Fish**	**Non-baited Traps**
Trial 1: 24-hr Trap Set (42.4 – 46.8°F), 10 Replications						
No. Crawfish/Trap	10.8	13.0	3.7	-	29.8	-
CPUE (lb/trap)	0.4	0.5	0.1	-	1.1	-
Size (cnt/lb)	26.2	28.1	27.1	-	26.7	-
Trial 2: 19-hr Trap Set (62.8 – 65.5°F), Seven Replications						
No. Crawfish/Trap	15.0	18.6	14.1	12.0	32.7	7.3
CPUE (lb/trap)	0.7	0.8	0.6	0.5	1.5	0.3
Size (cnt/lb)	22.5	22.1	23.4	23.7	21.6	25.4

EVALUATION OF A "MODIFIED PYRAMID" CRAWFISH TRAP

W.R. McClain and J.J. Sonnier

INTRODUCTION

The extensive method of production used in the farming of crawfish necessitates a method of harvest that is atypical of methods used to harvest most species in aquaculture. In crawfish aquaculture, a passive system is used that employs baited traps, and regular, frequent harvests are necessary. The heavy vegetation cover, encompassing virtually the entire pond area, limits the harvesting options. Seine harvesting, a common method for many aquaculture species, is ineffective. Additionally, since crawfish recruitment to the harvestable population is continual over much of the season, regular and frequent harvests are necessary, as opposed to the more common infrequent batch harvests. Furthermore, presence of soft (newly molted) crawfish precludes most active harvest methods. Therefore, this industry relies on the passive technique of baited traps.

The shallow nature of crawfish ponds allows for a different and more effective trap configuration than those used in the commercial fishery where deep water is often encountered. The wire-mesh "pyramid" trap, designed for use in shallow water, has emerged as the industry standard and is effective in capturing crawfish and efficient to operate. This trap is positioned upright in the pond with the top extending above water. The top is open to facilitate rapid removal of crawfish and rebaiting, and contains a retainer collar that minimizes crawfish escape and serves as a handle. The size and shape of the mesh wire used to construct the trap governs the size of crawfish retained by the trap. Most traps are currently made of ¾-inch plastic-coated square mesh that retain crawfish 12 g and larger. Traps are most effectively used when distributed throughout the pond and are normally set in rows to accommodate harvest by boat. Producers use approximately 12 traps/acre, but trap density can range from 8 to 24/acre, depending on intensity of the operation. Harvesting is the most labor intensive component of crawfish farming, and typically, 50 to 70% of total direct expenses are associated with the harvest. Bait alone usually accounts for 30 to 40% of the total.

Although the standard pyramid trap has been highly refined compared with early prototypes, it does have some drawbacks. The open top design, while allowing rapid emptying and baiting, acts as a disadvantage when birds, raccoons, and other predators "rob" the trap of its fish bait or captured crawfish through the handy opening. Also, crawfish can escape easily through the openings when traps are tipped over by wind or animals, costing the farmer valuable revenue. Seeking to correct these inadequacies of the pyramid trap, a commercial crawfish producer modified the pyramid design to encompass a spring-loaded top lid, which was simply operated by hand pressure as the operator gripped the trap for lifting and emptying. The hinged lid precluded use of an anchor rod, but the producer felt it was unnecessary since upset traps would not lose their catch and effectively continue trapping crawfish, albeit one of the three funnels may be out of water. Believing this trap design superior to the pyramid trap, the Rice Research Station was asked to conduct a comparison. Thus, this short trial was initiated.

Pond Area: One 1-acre pond

Pond History and Management: Same as for previous study "***Effects of Trap Density on Crawfish Yield in a Rice-Crawfish Field Rotational Management System***."

Trap Type: Two different designs of the 3-funnel pyramid style. Trap type constituted the experimental treatments in this study. The standard **Open-Top** traps (controls) were constructed of ⅞-inch square mesh wire and were fitted with a metal support rod. The experimental **Closed-Top** traps were constructed of ¾-inch hexagonal mesh wire, were modified with a spring loaded "lid", and did not come with the standard support rod. Eighteen traps of each design were used.

Bait Used: Manufactured (Cajun World, Purina Mills, Inc., St. Louis, MO; or Southern Pride, Country Acres Feed, Inc., Brentwood, MO). Bait type and amounts were consistent across experimental treatments daily.

Crawfish Harvest: 19 Apr – 5 May for a total of nine harvest days

Experimental Protocol: Traps were dispersed in an alternating fashion (every other trap was of the same type) within the pond in a long row to facility harvest. Catch was pooled each day by trap type, graded, and average yield and size, by grade, determined. The nine harvest days represented replications in time.

Crawfish Grades: Harvested crawfish were subjected to a grader (passive, water type) and sorted into three size-grade categories: "Large" - <15 count/lb, "Medium" - 15-21 count/lb, and "Small" - > 21 count/lb

Parameters: Crawfish catch per unit effort (CPUE), by weight and by number and average size at harvest

Statistical Analysis: Analysis of variance

Comments: The first observation with regard to the experimental trap was the difficulty and time involved to acquire and empty the test trap from a boat moving along a set path (trapping lane). On several occasions the closed-top traps were found upset and blown from their original placement location. This slowed the process considerably. However, no significant differences in yield by weight or by number of crawfish harvested were observed with regard to the two different trap types (Table 1). Also, average size at harvest for each grade was similar for the two traps. Even though the experimental closed-top trap has, as its asset, the ability to remain somewhat functional even when upset and laying on its side, the difficulty and time required to retrieve, empty, and rebait it renders it less desirable than the standard pyramid trap employing a support rod. Without an advantage in catch potential, the increased difficulty and time required to operate the experimental trap would add substantial cost to the harvesting operation over the course of a season (even assuming similar cost of the trap) by either requiring more man-hours (and wear and tear on harvesting boats and increased fuel costs) or fewer traps fished per acre. Therefore, in the absence of a significant yield lost with the standard pyramid trap because of predators, a recommendation cannot be made at this time for changing from the standard, rod-anchored pyramid trap to the experimental trap as designed.

Table 1. Average CPUE and crawfish size at harvest, by grade category, of crawfish caught in different trap types. No significant differences (P > 0.05) were observed with regard to trap type for yield, size, or proportion by grade category. Rice Research Station, Crowley, LA. 2005.

Trap Type	Grade	Yield (lb)	Yield (number)	Size (cnt/lb)	% of Total (by wt)
Pyramid ⅞-in Square* Mesh Wire	Large	0.44	4.7	10.5	68.7
	Medium	0.16	2.6	15.8	26.1
	Small	0.03	0.7	22.6	5.2
	Total CPUE	**0.64**	**7.9**	-	-
Closed Top ¾-in Hex* Mesh Wire	Large	0.44	4.8	10.9	71.3
	Medium	0.14	2.3	15.9	23.0
	Small	0.03	0.8	22.5	5.7
	Total CPUE	**0.62**	**7.9**	-	-

* Previous determinations found that traps constructed of ⅞-inch square mesh wire retains approximately the same size crawfish as traps constructed of ¾-inch hexagonal mesh wire.

Figure 1. Side-by-side comparisons of the industry standard "open-top" pyramid trap (left) and the experimental "closed-top" trap (right).

PRELIMINARY INVESTIGATION OF THE TOXICITY OF DINOTEFURAN, A RICE INSECTICIDE, ON RED SWAMP CRAWFISH

W.R. McClain, M.J. Stout, and J.J. Sonnier

INTRODUCTION

Crawfish are cultivated in Louisiana by more than 1,200 growers who, in 2004, produced about 70 million pounds in 118,000 acres of ponds. The crop was valued at about $42 million. Crawfish production is largely located in the south central region and is scattered among the many rice farms. In fact, crawfish and rice production are well integrated and co-exist in rotational cropping systems where the rice field is subsequently used to produce crawfish. Moreover, most of the acreage used to produce crawfish in Louisiana is managed under this type of cropping system. Under this strategy, there is a short overlap in seasons, whereby newly planted rice fields are dispersed among crawfish ponds during the peak crawfish production season. Rice and crawfish ponds are often in close proximity and commonly are separated only by a narrow road or levee.

In recent years, numerous incidents have occurred whereby crawfish production was halted or seriously damaged because of pesticide drift from an application to a nearby rice field, at great economic loss to the crawfish producer. A reduction in available insecticides have led more rice farmers to use the pyrethroid class of insecticides for rice water weevil control, which are typically applied in aerial applications, resulting in drift. A small amount of drift of the highly toxic pyrethroid compounds into a crawfish pond can be very detrimental to the affected crawfish producer.

Efforts are under way to investigate alternative rice insecticide compounds and/or alternative methods of application, both to mitigate problems with drift and crawfish and also for increased efficacy, economical, and resistance concerns. Among several products investigated by LSU AgCenter researchers for their effects on the rice water weevil, one compound appeared in preliminary tests to result in little or no toxic side effects on crawfish when used as optimal rates for the rice water weevil.

Dinotefuran, a granular neonicotonoid insecticide, has been evaluated for several years at the Rice Research Station for it efficacy in control of the rice water weevil under field conditions (see reports by M. Stout and R. Pousson, Water- and Drill-Seeded Tests of Dinotefuran in previous publications of this report for details of those studies). Preliminary tests continued for a second year, whereby the responses of crawfish were monitored after exposure in tests under the conditions of that study. Individual caged crawfish were placed in the experimental field plots of that test after establishment of the permanent flood but prior to insecticide applications and observed for mortality or toxicity. Treatments of Dinotefuran involved different rates and timings and were compared with a non-treated control. See the report *Dinotefuran: Early-Season Tests* on page 408 for more details of this study.

Rice Variety and Seeding Rate: Cocodrie, 90 lb/A

Planting and Permanent Flood Dates: Planting, Apr 05, 2005; Flood, May 04, 2005

Treatments: ***Crawfish Trial 1*** (May 11, 2005) – Untreated Control; Low rate = 120 g ai/A; Medium rate = 240 g ai/A. ***Crawfish Trial 2*** (May 25, 2005) – Untreated Control; High rate = 360 g ai/A.

Experimental Design: Crawfish were randomly placed in plots (individually within enclosures) where original treatments were assigned based on a randomized complete block design.

Wire Mesh Enclosures: ½-inch mesh wire, width = 6 inches, length = 10 inches, height = 10 inches. Enclosures with crawfish were placed in plots prior to chemical treatments of plots.

Crawfish: Red swamp crawfish (*Procambarus clarkii*); 12 reps (individual crawfish) per treatment of which approximately half were immature. Sex was not determined, but a mixture of males and females were employed.

Parameters: Original crawfish were observed for overt toxicity systems or death for up to 8 days post-treatment application, and cages with dead animals were replaced with fresh animals after 1 and 3 days post treatment.

Comments: In Trial 1, crawfish exposed to the higher dose of Dinotefuran (medium treatment rate) had a slightly higher mortality rate, even early on, than crawfish in the control and lower rate treatments (Table 1). However, with a low number of replications and the many factors that can affect crawfish survival, it is premature to conclude that the increased mortality in this study was a direct result of the higher treatment rate. The influence of Dinotefuran (and/or Dinotefuran treatment rate) on crawfish mortality is particularly questionable because results of Trial 2 indicated that no treatment effect was apparent at even a higher rate of application. Crawfish mortality in Trial 2 was only 8%, and the control group did not differ from those receiving the higher rate of insecticide. No overt signs of toxicity were observed for surviving crawfish – they appeared relatively healthy considering the stresses associated with confinement.

Because of the low numbers of replacement crawfish and inconsistent results (tables 2 and 3), conclusions regarding residual effects after initial treatment are not possible. Furthermore, it should be noted that although there may be some indigenous crawfish in a rice field at the time of insecticide application, brood crawfish are typically introduced well after application. However, it should be noted that these results are very preliminary, and further testing is warranted before satisfactory conclusions can be drawn regarding the effects of this insecticide on crawfish under a typical commercial rice/crawfish production scenario.

Table 1. Cumulative mortality of initial crawfish after several days post treatment in two Dinotefuran trials. Rice Research Station, Crowley, LA. 2005.

Treatment	**No. Stocked**	**No. Dead**	**% Dead**	**No. Dead**	**% Dead**	**No. Dead**	**% Dead**
			Trial 1				
		1 day after treatment		**3 days after treatment**		**6 days after treatment**	
Control	12	4	33.3%	4	33.3%	4	33.3%
Low*	12	3	25.0%	3	25.0%	3	25.0%
Medium*	12	5	41.7%	7	58.3%	7	58.3%
			Trial 2				
		1 day after treatment		**2 days after treatment**		**8 days after treatment**	
Control	12	1	8.3%	1	8.3%	1	8.3%
High*	12	1	8.3%	1	8.3%	1	8.3%

* Low, Medium, and High treatments are in reference to application rate of Dinotefuran.

Table 2. Cumulative mortality of 24-hr replacements after several days post replacement in the two Dinotefuran trials. Rice Research Station, Crowley, LA. 2005.

Treatment	No. Stocked	No. Dead	% Dead	No. Dead	% Dead
Trial 1					
		2 days after replacement		**5 days after replacement**	
Control	4	0	0%	1	25.0%
Low*	3	1	33.3%	1	33.3%
Medium*	5	2	40.0%	2	40.0%
Trial 2					
		1 day after replacement		**7 days after replacement**	
Control	1	0	0%	0	0%
High*	1	0	0%	0	0%

* Low, Medium, and High treatments are in reference to application rate of Dinotefuran.

Table 3. Cumulative mortality of 72-hr replacements after 3 and 4 days post replacement in the two Dinotefuran trials. Rice Research Station, Crowley, LA. 2005.

Treatment	No. Stocked	No. Dead	% Dead	No. Dead	% Dead
Trial 1					
		3 days after replacement		**4 days after replacement**	
Control	1**	-	-	-	-
Low*	1	0	0%	0	0%
Medium*	2	2	100%	-	-

* Low, Medium, and High treatments are in reference to application rate of Dinotefuran.
** Crawfish escaped enclosure shortly after stocking.

RICE DISEASE CONTROL STUDIES, 2005[1]

D.E. Groth, M.J. Frey, and J. Nugent

Sheath blight, bacterial panicle blight, and blast are three of the most important diseases of rice. How a farmer manages these diseases often means the difference between a profit and a loss. A number of factors affect disease development, including varietal resistance, cultural practices, cropping history, and pesticide usage. Environmental conditions also greatly affect disease development but are out of the farmer's hand. However, knowing which conditions are favorable for disease development allows the producer to initiate the appropriate disease control methods. Cultural management often plays an important role as evidenced by the fact that sheath blight was a minor disease until the introduction of semidwarf varieties, high N rates, and soybeans as a rotational crop.

Data from research tests suggest that rice diseases annually cause at least an average range of 12 to 15% loss in yield in the South. With present production costs and price of rice, this average yield loss translates into an average 33 to 40% loss in potential net return because of rice diseases. Direct losses to disease include reduction in plant stands, lodging, spotted kernels, fewer and smaller grains per plant, and a general reduction in plant efficiency. Indirect losses include the cost of fungicides used to manage disease, application costs, and reduced yields associated with special cultural practices that reduce disease but may not be conducive to producing maximum yields.

The major diseases of rice in Louisiana are the fungal disease blast, caused by Pyricularia grisea; sheath blight, caused by Thanatephorus cucumeris (Rhizoctonia solani); stem rot, caused by Magnaporthe salvinii (Sclerotium oryzae); brown spot, caused by Cochiobolus miyabeanus; narrow brown spot, caused by Sphaerulina oryzina (Cercospora janseana); and kernel smut, caused by Neovossia horrida. Seedling diseases caused by species of Achlya and Pythium are also important in water-seeded rice. Bacterial panicle blight has been identified as a major disease and is caused by the bacterium Burkholderia glumae. Minor diseases include crown rot, causal agent unknown; leaf scald, caused by Gerlachia oryzae; leaf smut, caused by Entyloma oryzae; sheath rot, caused by Sarocladium oryzae; stackburn disease, caused by Alternaria padwickii; sheath spot, caused by Rhizoctonia oryzae; crown sheath rot, caused by Gaeumannomyces graminis var. graminis; black kernel, caused by Curvularia lunata; seedling blights, caused by various fungi; false smut, caused by Ustilaginoidea virens; root rots, caused by several fungi; and several miscellaneous leaf, stem, and glume spotting diseases.

Host resistance and fungicides play an important role in limiting these losses. The objective of these studies is to develop disease management practices that economically reduce rice diseases and increase the yield and quality of rice.

This report is on current research evaluating both registered and experimental compounds. It also represents only one year of data, and multiple years are needed to evaluate agronomic practices effectively. Therefore, no specific recommendation of a product or practice is implied. For specific recommendations and more information, contact your local Cooperative Extension agent.

The use of a foliar fungicide to reduce rice diseases is often justified under severe disease conditions. Some factors that favor the use of a fungicide include: 1) history of disease in the field, 2) varietal susceptibility, 3) high yield potential, 4) rice is being grown for seed, 5) rice was planted late, and 6) rice ratooned. The primary targets for rice fungicide applications are sheath blight and blast. Generally, secondary rice diseases are not severe enough to justify a fungicide application. However, control of these secondary diseases, from sheath blight and blast applications, often contributes to the overall increase in yield and quality.

All of the fungicides tested have benefits and disadvantages. Tilt gives good sheath blight and leaf smut control but no control of blast. Moncut had good activity against sheath blight, but it had the narrowest disease control spectrum. Quadris combines excellent sheath blight activity with control of blast but is weak against narrow brown leaf spot and Cercospora sheath blotch.

[1] This research is supported in part by funds provided by rice producers through the Louisiana Rice Research Board and various agricultural chemical companies.

Many other factors affect fungicide efficacy, including application timing, cultural practices, inoculum levels, weather, varietal resistance, spray volume, type of adjuvants added to the spray solution, and the application method used. Problems can develop from these factors that limit fungicide activity. One problem occurs when fungicides are applied by air. Most of the material is deposited on the upper third of the canopy. Redistribution by rain and dew is then required to move the fungicide into the lower canopy where most of the disease is present. Redistribution into the lower canopy is necessary since these fungicides are either non-systemic or systemic. If systemic, they are only locally systemic or only move upward in the plant. Weathering associated with redistribution is also detrimental since some fungicidal activity is lost. Other conditions that limit fungicide activity include drift, volatility, and calibration errors. Rainfall immediately after application, before the fungicide can dry on the plant or be absorbed by the plant, can remove significant amounts of fungicides from the foliage and impair yield performance. Normally, a 4-hour drying period is adequate after application.

Since all fungicides labeled are very specific as to the diseases they control, scouting rice is extremely important to determine disease incidence and severity. Fields should be scouted weekly for disease development, beginning when the first tillers begin to develop and continuing through heading. Rice should be sampled at several (20 or more) locations throughout the field. The size of the field and the disease distribution will determine the extent of sampling. At each sampling location, 25 to 50 tillers should be examined for disease symptoms (refer to back pages and the Louisiana Agricultural Experiment Station Bulletin No. 828, Rice Diseases and Disorders in Louisiana). Other diseases that require fungicides for control, especially the rice blast disease, must be noted between scouting stops because damaging levels can develop from light infestations that were not detected at the scouting stops. For sheath blight, the percentage of tillers infected at the sampling locations should be averaged to determine the disease incidence for the field. Spraying a fungicide for sheath blight is warranted if an average of 5 to 10% of the tillers (approximately 20-40% positive stops) are infected during joint elongation stages of growth in susceptible varieties. Spraying moderately susceptible varieties is warranted if more than 15% of the tillers are infected (approximately 50% positive stops). Unfortunately, there is no good scouting/prediction system for blast or bacterial panicle blight at this time, and when leaf blast is found, preventive sprays to protect the head are recommended for susceptible varieties. Prevailing temperatures at heading predict bacterial panicle blight. Disease identification is extremely important since several diseases can be confused.

Table 1. List of fungicides and bactericides tested in 2005.

	Common Name	**Company**
Quadris 2.08 SC	Azoxystrobin	Syngenta
Moncut 75 WP	Flutolanil	Gowan
Stratego 2.08 EC	Trifloxystrobin / Propiconazole	Bayer
GEM 500 SC	Trifloxystrobin	Bayer
S-0208 20 WP	Oxolinic Acid	Valent
Quilt 1.16 SC	Azoxystrobin/ Propiconazole	Syngenta
Moncut 2 SC	Flutolanil	Gowan
Tilt 3.6 EC	Propiconazole	Syngenta

2005 Varietal and URN Disease Resistance Evaluation

Location: Rice Research Station, Crowley, LA

Soil Type: Crowley silt loam (pH 6.0, Clay 12%, Silt 71%, Sand 17%, CEC 9.4 cmole/kg)

Variety/Seed Rate: Various, ~100 lb/A

Plot Size: One to three 6-ft rows

Planting Method/Date: Hege planter (drill-seeded), Mar 29

Fertilization: Preplant 24-72-72, Mar 28; preflood 120-0-0, May 2

Experimental Design: Randomized complete block design with two to four replications

Water Management: Flushed, Apr 7, Apr 21; permanent flood, May 3

Herbicides: 4 qt Propanil, Apr 15; 4 qt Arrosolo + 1 oz Aim, Apr 27; 16 oz Clincher + 2.66 oz Permit, May 2

Insecticides: 1 oz Icon preplant, Mar 28

Fungicides: N/A

Inoculation Dates: Inoculated with 12 ml/row of a *Rhizoctonia solani* culture grown on a rice grain:rice hull mixture, June 8; bacterial panicle blight spray inoculated at boot split. All other inoculum came from natural sources.

Application Equipment: N/A

Application Dates: N/A

Disease Ratings: Sheath blight (SB), narrow brown leaf spot (NB), leaf smut (LS), brown spot (BS) severity ratings, Aug 23-25; Leaf blast (LB), July 20 or Aug 2

Drained: N/A

Harvest: N/A

Results: See Tables 2-9

Comments: Sheath blight and bacterial panicle blight severities were high to moderate; other diseases were light to moderate in severity. Leaf blast ratings were collected from an upland disease nursery with moderate disease pressure.

Table 2. Disease reaction of various varieties and experimental lines to leaf blast (LB), sheath blight (SB), narrow brown leaf spot (NB), leaf smut (LS), and brown spot (BS) at the Rice Research Station, Crowley, LA. 2004.

Character Rated		Bact.	Leaf	Sheath
Rating Data Type		Panicle	Blast	Blight
Rating Unit		0-9	0-9	0-9
Rating Date		07-18-2005	07-18-2005	07-21-2005
No.	Name			
1	CLXL8	1.5 mn	1.8 fgh	5.0 h-k
2	CL XP730	1.8 lmn	0.5 h	4.0 lm
3	XP723	1.8 lmn	1.0 fgh	4.5 j-m
4	XP721	3.0 g-l	1.3 fgh	4.8 i-l
5	XP728	2.8 h-m	0.5 h	4.5 j-m
6	XP729	1.5 mn	1.0 fgh	4.3 klm
7	XP732	1.3 n	1.0 fgh	5.3 g-j
8	XP731	2.0 k-n	0.8 gh	4.5 j-m
9	XP710	2.5 i-n	0.5 h	3.8 m
10	XP716	1.3 n	0.5 h	4.0 lm
11	Banks (URN 79)	2.3 j-n	1.8 fgh	6.0 d-g
12	CL161	4.0 e-h	5.0 abc	7.0 abc
13	Cheniere (URN 58)	4.3 d-g	4.0 bcd	6.3 c-f
14	Cocodrie (URN 59)	6.0 ab	3.8 cd	7.5 ab
15	Cybonnet (URN 20)	4.5 c-f	2.3 ef	6.8 bcd
16	Francis (URN 17)	5.8 bc	5.3 ab	5.5 f-i
17	Wells (URN 80)	4.5 c-f	4.8 a-d	5.8 e-h
18	Trenasse (URN 18)	6.3 ab	5.0 abc	7.5 ab
19	Bengal (URN 38)	5.8 bc	5.8 a	5.5 f-i
20	Medark (URN 39)	4.5 c-f	4.5 a-d	5.3 g-j
21	Jupiter (URN 37)	1.5 mn	3.8 cd	5.0 h-k
22	Pirogue	3.3 f-k	4.5 a-d	4.0 lm
23	CL131	6.3 ab	5.0 abc	7.8 a
24	0302082 (URN 45)	3.8 f-i	3.5 de	6.8 bcd
25	0302005 (URN 5)	3.5 f-j	5.5 a	6.8 bcd
26	Presidio (URN 19)	5.3 b-e	2.0 fg	6.0 d-g
27	Spring (URN 4)	4.3 d-g	2.0 fg	6.5 cde
28	Hidalgo (URN 118)	7.3 a	4.5 a-d	6.5 cde
29	Dixibell (URN 120)	3.0 g-l	4.0 bcd	5.8 e-h
30	URN 55 (MS release)	4.3 d-g	5.0 abc	6.3 c-f
31	URN 11 (61764 DH3)	5.5 bcd	5.5 a	5.8 e-h
LSD (P=.05)		1.46	1.46	0.90
Standard Deviation		1.03	1.03	0.63
CV		27.86	33.29	11.25
Replicate F		0.634	13.135	6.137
Replicate Prob(F)		0.5948	0.0001	0.0008
Treatment F		11.351	13.155	12.912
Treatment Prob(F)		0.0001	0.0001	0.0001

Means followed by same letter do not differ significantly (P=.05, LSD).

Table 3. Disease reactions of various varieties and experimental lines in the Group I Uniform Regional Rice Nursery to leaf blast (LB), bacterial panicle blight (BPB), and sheath blight (SB), at the Rice Research Station, Crowley, LA. 2005.

Disease Code		LB	BPB	SB
Rating Unit		0-9	0-9	0-9
Rating Date		07-18-2005	07-19-2005	07-20-2005
Trt No.	Treatment Name			
1	NWBT/3/LBNT/9902//LB	2.3 de	1.8 e	4.8 g
2	9502008-A//AR 1188/C	2.3 de	2.3 e	7.8 ab
3	((NWBT/RU8303181)/RS	4.3 abc	3.0 cde	6.8 cd
4	SPRING	1.5 e	3.0 cde	7.3 a-d
5	TACAURI/3/CPRS//82CA	4.3 abc	3.5 cde	7.0 bcd
6	((NWBT/RU8303181)/RS	4.5 ab	4.3 cd	7.5 abc
7	NWBT/3/LBNT/9902//LB	3.3 bcd	2.8 de	6.5 de
8	9502008//KATY/902207	2.0 de	3.3 cde	7.0 bcd
9	((NWBT/RU8303181)/RS	2.5 de	3.5 cde	8.0 a
10	RU8201176/4/LBNT/STB	1.5 e	3.5 cde	5.5 fg
11	61764DH3	3.3 bcd	4.8 bc	5.3 fg
12	((NWBT/RU8303181)/RS	2.5 de	2.8 de	8.0 a
13	L201//TBNT/BLMT/3/JD	4.3 abc	4.5 bcd	5.8 ef
14	8603006/3/MARS/NWRX/	5.3 a	4.3 cd	7.0 bcd
15	TBNT/LA110//LMNT/3/T	2.8 de	3.3 cde	7.8 ab
16	CPRS/3/L201//TBNT/BL	4.8 a	4.3 cd	7.3 a-d
17	FRANCIS	4.8 a	6.3 ab	6.8 cd
18	TRENASSE	4.3 abc	7.0 a	7.8 ab
19	PRESIDO (PRSD)	3.0 cd	4.8 bc	6.8 cd
20	CYBONNET	1.5 e	3.3 cde	7.0 bcd
LSD (P=.05)		1.38	1.81	0.78
Standard Deviation		0.97	1.28	0.55
CV		30.17	33.73	8.03
Replicate F		5.300	5.053	2.126
Replicate Prob(F)		0.0027	0.0036	0.1069
Treatment F		6.281	3.923	11.131
Treatment Prob(F)		0.0001	0.0001	0.0001

Means followed by same letter do not differ significantly (P=.05, LSD).

Table 4. Disease reactions of various varieties and experimental lines in the Group II Uniform Regional Rice Nursery to leaf blast (LB), bacterial panicle blight (BPB), and sheath blight (SB) at the Rice Research Station, Crowley, LA. 2005.

Disease Code		LB	BPB	SB
Rating Unit		0-9	0-9	0-9
Rating Date		07-18-2005	07-19-2005	07-21-2005
Trt No.	Treatment Name			
21	BRAZ/TBNT/3/164986-4	3.0 bc	6.0 a	6.8 bcd
22	CPRS/KBNT//9502008-A	2.0 c	3.8 c-f	7.3 ab
23	(CPRS/PANDA)/JEFF*2	2.3 c	4.5 a-d	6.8 bcd
24	BRAZ/TBNT/3/164986-4	4.3 ab	4.3 b-e	5.5 efg
25	JSMN/DLLA//CPRS/KDM	3.0 bc	5.0 abc	7.5 ab
26	(CPRS/PELDE)/JEFF	5.0 a	4.0 c-f	5.3 fg
27	RU9201176/3/KATY//TB	2.5 c	2.5 fg	4.8 g
28	BNGL//MERC/RICO/3/ME	3.0 bc	3.3 d-g	6.3 cde
29	(CPRS/PANDA)/JEFF*2	2.3 c	4.0 c-f	7.5 ab
30	BRAZ/TBNT/3/164986-4	3.0 bc	3.3 d-g	6.0 def
31	BNGL//MERC/RICO/3/ME	4.8 a	4.3 b-e	6.0 def
32	JEFF/(VSTA/LBNT//L20	5.0 a	2.8 efg	5.5 efg
33	8603006/3/MARS/NWRX/	4.3 ab	2.8 efg	7.3 ab
34	CCDR/JEFF	2.8 c	3.5 c-f	8.0 a
35	8904865S919/NWBT	5.5 a	5.8 ab	5.3 fg
36	8603006/3/MARS/NWRX/	5.0 a	4.3 b-e	7.0 bc
37	JUPITER	4.5 a	1.8 g	5.3 fg
38	BENGAL	5.3 a	5.0 abc	6.0 def
39	MEDARK	4.5 a	3.8 c-f	5.8 ef
40	SABINE (SABN)	4.3 ab	3.5 c-f	8.0 a
LSD (P=.05)		1.46	1.68	0.94
Standard Deviation		1.03	1.19	0.67
CV		27.16	30.51	10.44
Replicate F		3.537	0.009	3.198
Replicate Prob(F)		0.0202	0.9988	0.0301
Treatment F		4.982	3.207	8.941
Treatment Prob(F)		0.0001	0.0003	0.0001

Means followed by same letter do not differ significantly (P=.05, LSD).

Table 5. Disease reactions of various varieties and experimental lines in the Group III Uniform Regional Rice Nursery to leaf blast (LB), bacterial panicle blight (BPB), and sheath blight (SB) at the Rice Research Station, Crowley, LA. 2005.

Disease Code		LB	BPB	SB
Rating Data Type		0-9	0-9	
Rating Unit				0-9
Rating Date		07-18-2005	07-18-2005	07-21-2005
Trt No.	Treatment Name			
41	LMNT//82CAY21/CICA8/	2.3 efg	1.8 h	5.5 hi
42	AC110DH2/AC108DH2	2.5 def	4.0 b-f	7.8 ab
43	Kaybonnet/Zhongyouza	4.8 a	3.8 c-g	7.3 a-d
44	LBNT/9902//NWBT/3/KA	1.8 efg	1.5 h	5.8 ghi
45	9502008-A/DREW	1.8 efg	2.8 e-h	6.8 c-f
46	(RSMT/RU8703196//TQN	3.5 bcd	3.3 d-h	5.8 ghi
47	L201//TBNT/BLMT/3/CP	1.5 fg	5.5 abc	7.0 b-e
48	CCDR/4/CPRS/3/MBLE//	1.5 fg	5.3 abc	7.8 ab
49	((NWBT/RU8303181)/RS	2.8 cde	4.8 a-d	7.8 ab
50	LBNT/9902//NWBT/3/KA	2.0 efg	2.5 fgh	5.8 ghi
51	0043752/0047277	1.5 fg	5.0 a-d	6.8 c-f
52	Texmont/TeQing	4.8 a	4.5 a-e	7.5 abc
53	L201//TBNT/BLMT	3.5 bcd	5.0 a-d	5.3 i
54	8804032/KATY	2.5 def	2.5 fgh	6.3 e-h
55	V7817/SKBT	4.5 ab	3.8 c-g	7.0 b-e
56	SABER (SABR)		2.0 gh	
57	PRISCILLA	3.8 abc	5.8 ab	6.0 f-i
58	CHENIERE	4.0 ab	4.3 b-f	6.5 d-g
59	COCODRIE	2.3 efg	6.3 a	8.0 a
60	DREW	1.3 g	1.5 h	5.5 hi
LSD (P=.05)		1.20	1.85	0.94
Standard Deviation		0.85	1.31	0.67
CV		30.77	34.6	10.07
Replicate F		0.472	1.436	1.688
Replicate Prob(F)		0.7034	0.2425	0.1806
Treatment F		7.719	5.195	7.211
Treatment Prob(F)		0.0001	0.0001	0.0001

Means followed by same letter do not differ significantly (P=.05, LSD).

Table 6. Disease reaction of various varieties and experimental lines in the Group IV Uniform Regional Rice Nursery to leaf blast (LB), sheath blight (SB), narrow brown leaf spot (NB), leaf smut (LS), and brown spot (BS) at the Rice Research Station, Crowley, LA. 2005.

Disease Code		LB	BPB	SB
Rating Unit		0-9	0-9	0-9
Rating Date		07-18-2005	07-19-2005	07-21-2005
Trt No.	Treatment Name			
61	941009	3.3 bcd	2.8 def	6.0 de
62	9863910DH2/AR 1053	2.5 d	5.3 ab	6.3 cd
63	Kaybonnet/Zhongyouza	5.3 a	5.0 ab	7.3 ab
64	KATY/STBN//9101001/5	2.0 d	3.3 cde	5.0 f
65	9502008-A/DREW	2.5 d	4.8 abc	7.3 ab
66	((NWBT/RU8303181)/RS	3.3 bcd	4.5 abc	7.3 ab
67	BRAZ/TBNT/3/164986-4	4.0 abc	5.5 ab	6.0 de
68	CCDR/JEFF	2.5 d	4.5 abc	7.3 ab
69	(RSMT/RU8703196//TQN	4.5 ab	4.0 bcd	6.5 bcd
70	LBNT/9902/3/DAWN/969	2.3 d	3.3 cde	6.0 de
71	AC101DH2/AC102DH2	4.8 a	5.0 ab	5.3 ef
72	JEFF/((NWBT/RU830318	3.0 cd	6.0 a	7.0 abc
73	CPRS/3/L201//TBNT/BL	4.5 ab	5.5 ab	6.8 a-d
74	8804032/KATY	2.5 d	2.0 ef	5.3 ef
75	JEFF/((NWBT/RU830318	4.8 a	6.0 a	7.5 a
76	961237	3.0 cd	2.0 ef	4.5 f
77	VSTA/LBNT//L201/3/SK	4.8 a	2.8 def	5.0 f
78	PSCL/JEFF	2.8 cd	5.5 ab	6.3 cd
79	BANKS	3.3 bcd	1.5 f	5.0 f
80	WLLS	4.5 ab	4.0 bcd	6.0 de
LSD (P=.05)		1.28	1.70	0.81
Standard Deviation		0.91	1.21	0.57
CV		25.99	29.04	9.27
Replicate F		1.192	0.390	3.203
Replicate Prob(F)		0.3209	0.7606	0.0299
Treatment F		5.142	5.424	10.499
Treatment Prob(F)		0.0001	0.0001	0.0001

Means followed by same letter do not differ significantly (P=.05, LSD).

Table 7. Disease reactions of various varieties and experimental lines in the Group V Uniform Regional Rice Nursery to leaf blast (LB), bacterial panicle blight (BPB), and sheath blight (SB) at the Rice Res. Stn., Crowley, LA. 2005.

Disease Code		LB	BPB	SB
Rating Unit		0-9	0-9	0-9
Rating Date		07-18-2005	07-19-2005	07-21-2005
Trt No.	Treatment Name			
81	19991562	1.5 ef	5.0 b-f	5.5 def
82	0043676/AC105DH3	4.5 ab	6.0 a-d	7.5 ab
83	CPRS/JKSN	4.0 abc	5.5 a-e	7.5 ab
84	DREW/UA99-52	2.0 def	4.0 d-h	5.0 ef
85	0047272/0046181	2.5 c-f	6.0 a-d	7.5 ab
86	(CPRS/PELDE)/JEFF	4.5 ab	6.0 a-d	6.5 bcd
87	WLLS/ZHE733	1.5 ef	7.5 a	7.5 ab
88	AC125DH2/AC4311DH2	4.0 abc	4.5 c-g	6.5 bcd
89	((NWBT/RU8303181)/RS	1.5 ef	4.5 c-g	8.0 a
90	91642//KATY/NWBT/5/R	1.0 f	7.0 ab	5.5 def
91	AC110DH3/0043752	1.5 ef	5.0 b-f	6.0 cde
92	((NWBT/RU8303181)/RS	3.5 a-d	4.5 c-g	8.0 a
93	LBNT/9902/3/DAWN/969	4.5 ab	5.0 b-f	7.0 abc
94	CCDR/9770532DH2	2.0 def	5.0 b-f	7.0 abc
95	(CPRS/92:1021(KATY//	2.5 c-f	4.5 c-g	6.5 bcd
96	L201/7402003//KATY/N	2.0 def	3.5 e-h	4.5 f
97	9502008-A//AR 1142/M	1.5 ef	3.0 fgh	7.0 abc
98	((NWBT/RU8303181)/GF	3.0 b-e	2.0 h	7.0 abc
99	WLLS/PI 584698//ZHE	3.5 a-d	3.0 fgh	4.5 f
100	CPRS/JKSN	4.5 ab	4.5 c-g	7.5 ab
101	(CPRS/PELDE)/JEFF	3.0 b-e	5.0 b-f	7.5 ab
102	LGRU2/DREW	2.0 def	5.5 a-e	5.0 ef
103	9502008-A//AR 1142/M	3.0 b-e	4.5 c-g	8.0 a
104	(CPRS/92:1021(KATY//	3.5 a-d	4.0 d-h	6.5 bcd
105	9101001/86179/6/RNS3	3.5 a-d	2.0 h	5.0 ef
106	9502008-A/DREW	3.5 a-d	2.5 gh	7.0 abc
107	(GFMT/RU8703196)TX61	3.0 b-e	4.5 c-g	6.0 cde
108	DREW/PI 560243	3.0 b-e	4.5 c-g	5.0 ef
109	CPRS/LGRU//LGRU	3.5 a-d	2.0 h	5.0 ef
110	(CPRS/92:1021(KATY//	4.5 ab	3.5 e-h	7.0 abc
111	LBNT/9902/3/DAWN/969	4.0 abc	3.5 e-h	5.0 ef
112	TACAURI//KBNT/LCSN	3.5 a-d	3.0 fgh	7.0 abc
113	(CPRS/92:1021(KATY//	4.0 abc	6.0 a-d	6.0 cde
114	82CAY21/LMNT/3/L201/	4.0 abc	5.0 b-f	7.0 abc
115	DREW/CCDR	3.5 a-d	5.5 a-e	7.0 abc
116	MDSN/((NWBT/RU830318	2.5 c-f	5.0 b-f	7.0 abc
117	COCODRIE	2.5 c-f	5.0 b-f	7.0 abc
118	HIDALGO (HDLG)	4.5 ab	6.5 abc	6.5 bcd
119	L205	5.0 a	5.0 b-f	6.5 bcd
120	DIXIEBELLE (DXBL)	4.5 ab	5.5 a-e	6.5 bcd
LSD (P=.05)		1.91	2.13	1.33
Standard Deviation		0.94	1.05	0.66
CV		29.99	22.88	10.17
Replicate F		3.586	1.625	3.472
Replicate Prob(F)		0.0657	0.2099	0.0699
Treatment F		2.649	3.106	4.679
Treatment Prob(F)		0.0015	0.0003	0.0001

Means followed by same letter do not differ significantly (P=.05, LSD).

Table 8. Disease reactions of various varieties and experimental lines in the Group VI Uniform Regional Rice Nursery to leaf blast (LB), bacterial panicle blight (BPB), and sheath blight (SB) at the Rice Research Station, Crowley, LA. 2005.

Disease Code		LB	BPB	SB
Rating Unit		0-9	0-9	0-9
Rating Date		07-17-2005	07-18-2005	07-21-2005
Trt No.	Treatment Name			
121	MDRK/PI 430439	3.0 efg	4.5 a-e	5.5 def
122	CPRS/3/L201//TBNT/BL	4.0 cde	4.0 b-f	7.0 abc
123	((NWBT/RU8303181)/RS	2.0 gh	3.5 c-f	8.0 a
124	CPRS/RU9201176//WLLS	3.5 def	3.5 c-f	5.5 def
125	MERC/RICO//BNGL/3/SM	5.0 abc	4.5 a-e	4.5 fg
126	((NWBT/RU8303181)/RS	4.0 cde	3.5 c-f	6.5 bcd
127	MDRK/PI 430439	3.0 efg	4.5 a-e	5.0 efg
128	AC425DH2/AC636DH1	2.0 gh	5.0 a-d	7.5 ab
129	(CPRS/PANDA)/JEFF*2	2.0 gh	5.5 abc	8.0 a
130	DREW/UA99-52	4.0 cde	6.0 ab	6.0 cde
131	MERC/RICO//BNGL/3/SM	5.0 abc	4.0 b-f	6.5 bcd
132	((NWBT/RU8303181)/RS	2.0 gh	5.0 a-d	6.0 cde
133	KATY/NWBT//L201/7402	1.5 h	2.5 ef	4.5 fg
134	BNGL/MERC/RICO/3/MER	4.5 bcd	6.5 a	6.0 cde
135	MDSN/((NWBT/RU830318	2.0 gh	3.5 c-f	8.0 a
136	STG99F5-13-025/MDRK	3.0 efg	5.5 abc	6.5 bcd
137	MERC/RICO//BNGL/3/SM	4.5 bcd	5.5 abc	5.5 def
138	MDSN/((NWBT/RU830318	2.5 fgh	5.0 a-d	7.0 abc
139	SHUFENG 121-1655	2.5 fgh	2.0 f	4.0 g
140	MERC/RICO//BNGL/3/SM	5.5 ab	4.5 a-e	6.0 cde
141	(CPRS/92:1021(KATY//	4.0 cde	6.0 ab	6.5 bcd
142	BASMATI-370/KATY/4/V	2.5 fgh	4.0 b-f	4.5 fg
143	MBLE//TQNG/MBLE (MCR	2.0 gh	6.0 ab	5.5 def
144	(CPRS/92:1021(KATY//	4.5 bcd	5.5 abc	7.0 abc
145	PI 584720/ZHE 733	2.0 gh	3.5 c-f	5.0 efg
146	SMARS/MARS//…/3/MERC	5.0 abc	6.0 ab	5.5 def
147	MDSN/((NWBT/RU830318	3.0 efg	4.0 b-f	7.0 abc
148	NWBT/3/LBNT/9902//LB	2.5 fgh	2.0 f	6.0 cde
149	CCDR/9770532DH2	1.5 h	5.5 abc	7.5 ab
150	((NWBT/RU8303181)/GF	4.0 cde	4.5 a-e	6.5 bcd
151	MDRK/UA99-123	3.0 efg	4.5 a-e	6.0 cde
152	YD-4/RSMT	2.0 gh	5.5 abc	5.5 def
153	(CPRS/92:1021(KATY//	4.5 bcd	6.0 ab	6.0 cde
154	VSTA/LBNT//L201/3/SK	4.0 cde	5.0 a-d	6.5 bcd
155	MCR 03-007	3.5 def	3.5 c-f	6.0 cde
156	CPRS/3/L201//TBNT/BL	4.0 cde	5.0 a-d	7.5 ab
157	CPRS/3/L201//TBNT/BL	4.0 cde	6.0 ab	6.5 bcd
158	DELLROSE	5.0 abc	3.0 def	6.0 cde
159	BENGAL	6.0 a	6.0 ab	6.5 bcd
160	FRANCIS	5.0 abc	6.0 ab	6.0 cde
LSD (P=.05)		1.46	2.37	1.28
Standard Deviation		0.72	1.17	0.63
CV		21.03	25.26	10.23
Replicate F		0.215	0.145	1.129
Replicate Prob(F)		0.6453	0.7054	0.2946
Treatment F		5.748	2.011	4.859
Treatment Prob(F)		0.0001	0.0159	0.0001

Means followed by same letter do not differ significantly (P=.05, LSD).

Table 9. Disease reactions of various varieties and experimental lines in the Group VII Uniform Regional Rice Nursery to leaf blast (LB), bacterial panicle blight (BPB), and sheath blight (SB) at the Rice Research Station, Crowley, LA. 2005.

Disease Code		LB	BPB	SB
Rating Unit		0-9	0-9	0-9
Rating Date		07-17-2005	07-18-2005	07-21-2005
Trt No.	Treatment Name			
161	DLMT//KATY/NWBT/4/NW	4.0 b-e	5.0 a-d	5.5 def
162	MCR03-2771	4.5 bcd	5.5 abc	6.0 cde
163	((NWBT/RU8303181)/GF	4.5 bcd	4.5 b-e	6.0 cde
164	LBNT/9902/3/DAWN/969	4.0 b-e	3.0 e-h	4.5 fg
165	CCDR//LGRU/LCSN	3.0 def	3.5 d-g	7.5 ab
166	(CPRS/92:1021(KATY//	2.5 ef	4.5 b-e	6.5 bcd
167	NWBT/3/LBNT/9902//LB	4.5 bcd	2.5 f-i	5.5 def
168	LGRU/LCSN	3.0 def	3.5 d-g	7.0 abc
169	((NWBT/RU8303181)/GF	4.5 bcd	2.5 f-i	6.5 bcd
170	NWBT/3/LBNT/9902//LB	4.5 bcd	1.0 i	5.0 efg
171	CCDR/4/CPRS/3/MBLE//	2.5 ef	5.5 abc	7.5 ab
172	(MARS/CM101)/(LBNT_W	7.0 a	4.0 c-f	5.5 def
173	LBNT/9902/3/DAWN/969	5.5 ab	4.5 b-e	6.0 cde
174	KATY/CPRS//JKSN/3/AR	2.5 ef	3.5 d-g	7.5 ab
175	(GFMT/RU8703196)TX61	3.0 def	2.0 ghi	5.5 def
176	LBNT/9902/3/DAWN/969	5.0 bc	3.0 e-h	6.0 cde
177	96SP287/95B8472 -300	2.0 f	5.5 abc	7.5 ab
178	(GFMT/RU8703196)TX61	3.0 def	3.0 e-h	5.0 efg
179	KBNT LPA1-1/BBLE	4.0 b-e	2.0 ghi	6.0 cde
180	JSMN/DLLA//DLLA-726	3.5 c-f	5.5 abc	7.0 abc
181	(GFMT/RU8703196)TX61	3.0 def	2.5 f-i	4.5 fg
182	DREW/5/NWBT/3/DAWN/9	2.5 ef	3.0 e-h	6.0 cde
183	JSMN/DLLA//96SP287-5	3.0 def	4.5 b-e	7.0 abc
184	((NWBT/RU8303181)/GF	4.0 b-e	2.5 f-i	6.5 bcd
185	INDICA 12	2.0 f	1.5 hi	4.5 fg
186	8603006/3/MARS/NWRX/	5.5 ab	4.5 b-e	6.0 cde
187	(CPRS/92:1021(KATY//	4.0 b-e	3.5 d-g	7.0 abc
188	INDICA 13	2.0 f	1.0 i	4.0 g
189	9502008-A//AR 1188/C	2.5 ef	6.0 ab	8.0 a
190	((NWBT/RU8303181)/GF	4.0 b-e	3.0 e-h	6.0 cde
191	8603006/3/MARS/NWRX/	5.0 bc	6.0 ab	7.0 abc
192	CPRS/KBNT//9502008	2.5 ef	5.5 abc	8.0 a
193	CPRS/3/L201//TBNT/BL	3.0 def	6.0 ab	7.0 abc
194	A301/KATY	2.0 f	6.5 a	6.5 bcd
195	9502008/CPRS//950200	2.5 ef	3.0 e-h	6.5 bcd
196	CPRS/3/L201//TBNT/BL	4.5 bcd	5.0 a-d	6.0 cde
197	CPRS/3/L201//TBNT/BL	5.5 ab	4.0 c-f	7.0 abc
198	RSMT/KATY	5.5 ab	4.5 b-e	6.5 bcd
199	CYPRESS	4.5 bcd	4.5 b-e	7.0 abc
200	XP 723	2.0 f	2.0 ghi	5.5 def
LSD (P=.05)		1.78	1.74	1.08
Standard Deviation		0.88	0.86	0.54
CV		24.1	22.52	8.57
Replicate F		11.695	5.456	6.268
Replicate Prob(F)		0.0015	0.0247	0.0166
Treatment F		3.962	5.822	6.786
Treatment Prob(F)		0.0001	0.0001	0.0001

Means followed by same letter do not differ significantly (P=.05, LSD).

2005 Sheath Blight Rice CAPS Trial

Location: Rice Research Station, Crowley, LA

Soil Type: Crowley silt loam (pH 6.0, Clay 12%, Silt 71%, Sand 17%, CEC 9.4 cmole/kg)

Variety/Seed Rate: Various varieties and lines at approximately 100 lb/A

Plot Size: One 6-ft row

Planting Method/Date: Hege planter (drill-seeded), Apr 13-14

Fertilization: Preplant 24-72-22, Apr 13; preflood 90-0-0, May 23

Experimental Design: Randomized complete block design with three replications

Water Management: Flushed, Apr 21, May 2; permanent flood, May 24

Herbicides: 4 qt Rice shot, May 10; 4 qt propanil + 1.33 oz/A Permit, May 23

Insecticides: 1 oz Icon preplant, Apr 13; 2 oz/A Karate Z, June 3 by hand sprayer (not all of the field received this treatment)

Fungicides: None

Inoculation Dates: 10 ml/plot of *Rhizoctonia solani* culture grown on a rice grain: rice hull mixture, June 16

Application Equipment: None

Application Dates:

Growth Stage	Date	Time	Temp	Wind	RH	Clouds	Dew
N/A							

Disease Ratings: Sheath blight severity ratings, July 22-Aug 15

Drained: Field allowed to dry naturally

Harvest: Aug 25-26

Results: Sheath blight ratings ranged from 2.7 to 8.0. Plant heights ranged from 50 to 146 cm. Heading dates ranged from July 13 to July 30.

Comments: Sheath blight severity was severe.

2005 Sheath Blight Fungicide Trial

Location: Rice Research Station, Crowley, LA

Soil Type: Crowley silt loam (pH 6.0, Clay 12%, Silt 71%, Sand 17%, CEC 9.4 cmole/kg)

Variety/Seed Rate: Cocodrie, 100 lb/A

Plot Size: 4 x 16 ft

Planting Method/Date: Drill-seeded, Mar 29

Fertilization: Preplant 24-72-22, Mar 25; preflood 130-0-0, May 2

Experimental Design: Randomized complete block design with four replications

Water Management: Flushed, Apr 7, Apr 21; permanent flood, May 3

Herbicides: 4 qt propanil, Apr 15; 4 qt Arrosolo Apr 27; 16 oz/A Clincher + 2.66 oz Permit, May 2

Insecticides: 1 oz Icon preplant, Mar 28

Fungicides: Various, see Table 10.

Inoculation Dates: 100 ml/plot of *Rhizoctonia solani* culture grown on a rice grain:rice hull mixture, June 8

Application Equipment: CO_2 backpack sprayer, 8002 tips, 15 gal/A

Application Dates:

Growth Stage	Date	Time	Temp	Wind	RH	Clouds	Dew
B	6/21	7:30 AM	91° F	0 mph	80%	0%	light

Disease Ratings: Sheath blight severity ratings, July 22

Drained: July 29

Harvest: Aug 9

Results: See Table 10

Comments: Sheath blight severity was severe; other diseases failed to develop or were very light.

Table 10. Effect of various fungicides, rates and timings on sheath blight development and yield of Cocodrie rice at the Rice Research Station, Crowley, LA, 2005.

Pathogen Code							SB	SB	Yield	Milling	Milling
Rating Unit							% Till	0-9	lb/A	% Whole	% Total
Rating Date							07-22-2005	07-22-2005	08-09-2005	09-20-2005	09-20-2005
Trt No.	Treatment Name	Form Amt	Fm Ds	Rate	Rate Unit	Grow Stg					
1	Unsprayed Check						78.8 a	7.0 a	7149 g	54.6 e	65.0 b
2	Tilt	3.6	EC	10	FL OZ/A	B	51.3 b	6.0 ab	8635 f	58.5 cd	67.4 a
3	Quadris	2.08	SC	9	FL OZ/A	B	32.8 bc	3.8 fgh	9892 ab	58.5 cd	67.6 a
4	Quadris	2.08	SC	12	FL OZ/A	B	32.0 bc	3.5 gh	9842 ab	59.7 a-d	68.4 a
5	Stratego	2.08	EC	16	FL OZ/A	B	50.5 b	5.5 bc	9240 b-f	58.4 cd	67.5 a
6	Stratego	2.08	EC	19	FL OZ/A	B	26.3 c	4.0 e-h	9856 ab	61.0 ab	68.9 a
7	Gem	25	DF	8	OZ/A	B	42.5 bc	4.3 d-g	9526 a-d	59.7 a-d	68.0 a
8	Gem	25	DF	9.6	OZ/A	B	32.8 bc	5.3 bcd	9534 a-d	58.8 bcd	68.0 a
9	Quilt	1.66	SC	28	FL OZ/A	B	30.8 bc	4.0 e-h	9479 a-e	59.6 a-d	68.8 a
10	Quilt	1.66	SC	34	FL OZ/A	B	29.3 c	3.0 h	9673 abc	58.9 bcd	67.8 a
11	Moncut	70	DF	0.7	LB/A	B	41.5 bc	5.0 b-e	8868 def	58.0 d	67.4 a
12	Moncut	70	DF	0.7	LB/A	B	40.0 bc	4.8 c-f	9642 abc	59.2 bcd	67.4 a
	Protyx	1	EC	0.125	% V/V	B					
13	Moncut	70	DF	1	LB/A	B	40.3 bc	5.5 bc	8805 ef	60.4 abc	68.7 a
14	Moncut	70	DF	1.3	LB/A	B	28.3 c	5.0 b-e	9415 a-e	58.1 d	67.4 a
15	Moncut	4	SC	16	FL OZ/A	B	36.3 bc	5.0 b-e	9063 c-f	59.4 bcd	68.6 a
16	Moncut	4	SC	16	FL OZ/A	B	32.5 bc	3.8 fgh	9247 b-f	58.6 cd	67.1 ab
	Protyx	1	EC	0.125	% V/V	B					
17	Moncut	4	SC	23	FL OZ/A	B	35.3 bc	4.3 d-g	9135 c-f	58.5 cd	67.8 a
18	Moncut	4	SC	32	FL OZ/A	B	37.3 bc	4.5 c-g	9345 a-e	59.4 bcd	68.2 a
19	Stratego	2.08	EC	19	FL OZ/A	B	31.3 bc	4.0 e-h	9940 a	61.9 a	69.2 a
	USF2004	2	SC	3	FL OZ/A	B					
20	Quadris	2.08	SC	4	FL OZ/A	B	28.5 c	3.5 gh	9471 a-e	60.7 abc	68.8 a
	Quilt	1.66	SC	34	FL OZ/A	B					
LSD (P=.05)							20.70	1.12	690.5	2.31	2.17
Standard Deviation							14.64	0.79	488.3	1.10	1.04
CV							38.64	17.33	5.26	1.86	1.53
Replicate F							0.876	0.874	4.512	0.989	0.540
Replicate Prob(F)							0.4589	0.4598	0.0066	0.3325	0.4714
Treatment F							2.618	6.029	6.526	3.594	1.596
Treatment Prob(F)							0.0027	0.0001	0.0001	0.0038	0.1583

Means followed by same letter do not differ significantly (P=.05, LSD).

2005 Variety by Fungicide Trial

Location: Rice Research Station, Crowley, LA

Soil Type: Crowley silt loam (pH 6.0, Clay 12%, Silt 71%, Sand 17%, CEC 9.4 cmole/kg)

Variety/Seed Rate: Cocodrie, Cypress, Bengal, Francis, Cheniere, 100 lb/A

Plot Size: 4 x 16 ft

Planting Method/Date: Drill-seeded, Mar 29

Fertilization: Preplant 24-72-22, Mar 25; preflood 130-0-0, May 2

Experimental Design: Randomized complete block design with four replications

Water Management: Flushed, Apr 7, Apr 21; permanent flood, May 3

Herbicides: 4 qt propanil, Apr 15; 4 qt Arrosolo, Apr 27; 16 oz/A Clincher + 2.66 oz Permit, May 2

Insecticides: 1 oz Icon preplant, Mar 28

Fungicides: Various, see Table 11

Inoculation Dates: 100 ml/plot of *Rhizoctonia solani* culture grown on a rice grain:rice hull mixture, June 8

Application Equipment: CO_2 backpack sprayer, 8002 tips, 15 gal/A

Application Dates:

Growth Stage	Date	Time	Temp	Wind	RH	Clouds	Dew
B	Jun 20	12 Noon	86° F	3 mph	36%	50%	none
H	Jul 15	9:00 AM	84° F	10 mph	83%	40%	mod.

Disease Ratings: Sheath blight severity ratings, July 4, July 27

Drained: July 29

Harvest: Aug 11

Results: See Table 11

Comments: Sheath blight severity was severe; other diseases failed to develop or were very light.

Table 11. Effect of varietal resistance, sheath blight inoculation, and fungicide applications on sheath blight development and yield of rice at the Rice Research Station, Crowley, LA. 2005.

Trt #	Treatment Name	Form Amt	Fm Ds	Rat e	Rate Unit	Grow Stg	SB % Till 08-04-2005	SB 0-9 07-27-2005	Yield lb/A 08-11-2005	Milling % Whole 09-19-2005	Milling % Total 09-19-2005
	Pathogen Code										
	Rating Unit										
	Rating Date										
1	Cypress Uninoculated Check						29.0 efg	4.5 d	8155 fg	59.7 a	65.2 b-f
2	Cypress Inoculated Check						75.3 b	7.0 b	7066 i	57.0 a-e	63.4 efg
3	Cypress Moncut	70	DF	0.7	LB/A	B & H	26.5 e-i	3.8 def	8123 fgh	58.7 abc	64.5 d-g
4	Cypress Quadris	2.08	SC	9	FL OZ/A	B & H	27.5 e-h	3.3 ef	8832 b-f	59.8 a	64.5 c-g
5	Cocodrie Uninoculated Check						34.0 de	4.5 d	8383 d-g	57.3 a-e	65.5 b-e
6	Cocodrie Inoculated Check						92.0 a	8.0 a	7037 i	55.0 cde	68.5 a
7	Cocodrie Moncut	70	DF	0.7	LB/A	B & H	32.3 ef	4.0 de	8795 b-g	58.7 abc	66.7 a-d
8	Cocodrie Quadris	2.08	SC	9	FL OZ/A	B & H	33.5 de	3.8 def	9070 a-d	59.0 ab	67.0 a-d
9	Bengal Uninoculated Check						18.5 f-j	3.8 def	8569 c-g	55.7 b-e	62.0 g
10	Bengal Inoculated Check						47.5 cd	5.8 c	8234 efg	56.6 a-e	62.8 fg
11	Bengal Moncut	70	DF	0.7	LB/A	B & H	21.8 e-i	3.8 def	8549 c-g	58.8 abc	63.5 efg
12	Bengal Quadris	2.08	SC	9	FL OZ/A	B & H	14.8 hij	3.0 f	9738 a	59.2 ab	64.9 b-f
13	Francis Uninoculated Check						16.3 g-j	3.3 ef	9001 a-e	54.0 e	64.7 b-f
14	Francis Inoculated Check						54.3 c	5.5 c	8043 gh	54.3 de	63.2 efg
15	Francis Moncut	70	DF	0.7	LB/A	B & H	13.0 ij	3.0 f	9311 abc	54.3 de	65.1 b-f
16	Francis Quadris	2.08	SC	9	FL OZ/A	B & H	6.5 j	3.0 f	9543 ab	55.6 b-e	64.9 b-f
17	Cheniere Uninoculated Check						32.5 ef	3.8 def	8772 c-g	59.1 ab	67.1 abc
18	Cheniere Inoculated Check						70.5 b	6.8 b	7364 hi	56.6 a-e	67.2 ab
19	Cheniere Moncut	70	DF	0.7	LB/A	B & H	31.8 ef	3.3 ef	8476 d-g	58.1 a-d	67.1 a-d
20	Cheniere Quadris	2.08	SC	9	FL OZ/A	B & H	25.5 e-i	3.5 ef	9007 a-d	57.9 a-d	65.4 b-f
	LSD (P=.05)						14.22	0.93	770.5	3.87	2.63
	Standard Deviation						10.06	0.65	544.8	1.85	1.26
	CV						28.62	15.04	6.41	3.23	1.93
	Replicate F						3.362	0.857	9.702	1.021	1.919
	Replicate Prob(F)						0.0248	0.4690	0.0001	0.3251	0.1820
	Treatment F						19.660	20.250	7.399	2.141	3.632
	Treatment Prob(F)						0.0001	0.0001	0.0001	0.0528	0.0036

Means followed by same letter do not differ significantly (P=.05, LSD).

2005 Moncut Fungicide Flood Application Trial

Location: Rice Research Station, Crowley, LA

Soil Type: Crowley silt loam (pH 6.0, Clay 12%, Silt 71%, Sand 17%, CEC 9.4 cmole/kg)

Variety/Seed Rate: Cocodrie, Bengal, CL 161, Cheniere, 100 lb/A

Plot Size: 4 x 16 ft

Planting Method/Date: Drill-seeded, Apr 29

Fertilization: Preplant 24-72-72, Apr 28; preflood 130-0-0, May 29

Experimental Design: Factorial arranged in a randomized complete block design with four replications

Water Management: Flushed, May 3; permanent flood, May 25

Herbicides: 4 qt Arrosolo + 1.3 oz/A Permit, May 16; Propanil 3.5 qt/A + 1.33 oz/A Aim, May 24

Insecticides: 1 oz Icon preplant, Apr 28; 2 oz/A Karate Z, July 1

Fungicides: Moncut applied on fertilizer (100 lb/A 21-0-0)

Inoculation Dates: Sheath blight inoculum applied by hand on June 14

Application Equipment: Applied by hand broadcast

Application Dates:

Growth Stage	Date	Time	Temp	Wind	RH	Clouds	Dew
PI	June 23	9:30 am	82F	1 mph	85%	85%	mod

Disease Ratings: Percent tillers infected with sheath blight and severity, Aug 22

Drained: Aug 7

Harvest: Aug 31

Results: See Tables 12 and 13

Comments: Sheath blight severity was light to moderate.

Table 12. The effects of 0.5 (1X) and 1.0 (2X) lb ai/A Moncut rates applied to the flood water on topdress fertilizer on sheath blight development on various rice varieties at the Rice Research Station, Crowley, LA. 2005.

Disease Code	SB	SB	Yield	Milling	Milling
Rating Data Type	% Till	0-9	lb/A	Whole	Total
Rating Unit				%	%
Rating Date	08-22-2005	08-22-2005	08-31-2005	09-25-2005	09-25-2005
TABLE OF R MEANS					
Replicate 1	44.8	5.4	8590.75488	62.31	70.67
Replicate 2	51.2	6.0	8681.56836	60.92	70.88
Replicate 3	46.7	5.4	8628.77051	61.75	70.38
Replicate 4	47.4	5.7	8571.99316	60.27	70.03
TABLE OF A MEANS					
1 Untreated	46.1	5.9	8571	60.36	70.74
2 Moncut 1X	49.6	5.8	8363	61.37	70.03
3 Moncut 2X	46.8	5.2	8921	62.20	70.71
TABLE OF B MEANS					
1 Cocodrie	52.4	6.0	8957	61.16	70.64
2 Bengal	24.7	4.4	9267	61.18	70.44
3 CL161	57.8	6.3	7670	60.72	69.99
4 Cheniere	55.1	5.8	8580	62.18	70.89
TABLE OF AB MEANS					
1 Untreated 1 Cocodrie	53.8	6.8	8681	59.90	70.72
2 Moncut 1X 1 Cocodrie	51.3	6.0	8897	61.45	70.05
3 Moncut 2X 1 Cocodrie	52.3	5.3	9293	62.13	71.15
1 Untreated 2 Bengal	18.8	4.8	9131	59.75	70.43
2 Moncut 1X 2 Bengal	35.5	4.5	8876	61.60	70.90
3 Moncut 2X 2 Bengal	19.8	4.0	9794	62.20	70.00
1 Untreated 3 CL161	56.5	6.5	7919	59.87	70.40
2 Moncut 1X 3 CL161	56.8	6.8	7200	61.05	69.40
3 Moncut 2X 3 CL161	60.3	5.8	7890	61.25	70.18
1 Untreated 4 Cheniere	55.5	5.8	8553	61.90	71.40
2 Moncut 1X 4 Cheniere	55.0	5.8	8480	61.40	69.78
3 Moncut 2X 4 Cheniere	54.8	5.8	8705	63.23	71.50

Table 13. The analysis of the effects of 0.5 (1X) and 1.0 (2X) lb ai/A Moncut rates applied to the flood water on topdress fertilizer on sheath blight development on various rice varieties at the Rice Research Station, Crowley, LA. 2005.

FACTORIAL/POOLED ERROR ANOVA For SB % Till 08-22-2005

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	Prob(F)	LSD (.05)
Total	47	14094.000000				
R	3	260.500000	86.833333	0.628	0.6019	9.8
A	2	111.500000	55.750000	0.403	0.6713	8.5
B	3	8517.833333	2839.277778	20.545	0.0001	9.8
AB	6	643.666667	107.277778	0.776	0.5943	17.0
ERROR	33	4560.500000	138.196970			

FACTORIAL/POOLED ERROR ANOVA For SB 0-9 08-22-2005

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	Prob(F)	LSD (.05)
Total	47	47.250000				
R	3	2.750000	0.916667	2.689	0.0623	0.5
A	2	4.875000	2.437500	7.150	0.0026	0.4
B	3	25.416667	8.472222	24.852	0.0001	0.5
AB	6	2.958333	0.493056	1.446	0.2271	0.8
ERROR	33	11.250000	0.340909			

FACTORIAL/POOLED ERROR ANOVA For Yield lb/A 08-31-2005

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	Prob(F)	LSD (.05)
Total	47	38023864.662279				
R	3	84183.775707	28061.258569	0.055	0.9825	592.91284
A	2	2539463.084477	1269731.542239	2.510	0.0967	513.47760
B	3	17247538.290080	5749179.430027	11.365	0.0001	592.91284
AB	6	1459639.449327	243273.241554	0.481	0.8176	1026.95520
ERROR	33	16693040.062688	505849.698869			

FACTORIAL/POOLED ERROR ANOVA For Milling Whole % 09-25-2005

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	Prob(F)	LSD (.05)
Total	47	125.404894				
R	3	29.202292	9.734097	6.740	0.0011	1.00
A	2	27.295471	13.647736	9.450	0.0006	0.87
B	3	13.554068	4.518023	3.128	0.0388	1.00
AB	6	7.692879	1.282147	0.888	0.5149	1.74
ERROR	33	47.660183	1.444248			

FACTORIAL/POOLED ERROR AOV For Milling Total % 09-25-2005

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	Prob(F)	LSD (.05)
Total	47	42.156695				
R	3	4.998331	1.666110	3.029	0.0431	0.62
A	2	5.095420	2.547710	4.632	0.0169	0.54
B	3	5.220027	1.740009	3.163	0.0373	0.62
AB	6	8.691242	1.448540	2.633	0.0338	1.07
ERROR	33	18.151675	0.550051			

2005 Panicle Blight Seed Treatment Trial

Location: Rice Research Station, Crowley, LA

Soil Type: Crowley silt loam (pH 6.0, Clay 12%, Silt 71%, Sand 17%, CEC 9.4 cmole/kg)

Variety/Seed Rate: Bengal, Francis, Wells, and LM-1, 100 lb/A

Plot Size: 4 x 16 ft

Planting Method/Date: Drill-seeded, Apr 29

Fertilization: Preplant 24-72-72, Apr 28; preflood 130-0-0, May 24

Experimental Design: Factorial arranged in a randomized complete block design with four replications

Water Management: Flushed, May 3; permanent flood, May 25

Herbicides: 4 qt Arrosolo + 1.3 oz/A Permit, May 16; Propanil 3.5 qt/A + 1.33 oz/A Aim, May 24

Insecticides: 1 oz Icon preplant, Apr 28; 2 oz/A Karate Z, June 1

Fungicides: None

Inoculation Dates: All inoculum was from natural sources

Application Equipment: N/A

Application Dates:

Growth Stage	Date	Time	Temp	Wind	RH	Clouds	Dew
N/A							

Disease Ratings: Sheath blight severity ratings, Aug 24

Drained: Aug 8

Harvest: Aug 31

Results: See Tables 14 and 15

Comments: Bacterial panicle blight severity was very light.

Table 14. Effect of Oxolinic acid bactericide seed treatment on bacterial panicle blight and rice yield of various varieties at the Rice Research Station in Crowley, LA. 2005.

Disease Code							BPB	Yield
Rating Unit							0-9	lb/A
Rating Date							08-24-2005	08-31-2005
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg		
TABLE OF R MEANS								
Replicate 1							0.8	7603
Replicate 2							1.0	7963
Replicate 3							0.9	8423
Replicate 4							1.0	8322
Replicate 5							1.3	8188
Replicate 6							1.5	8321
TABLE OF A MEANS								
1	Untreated						1.5	8181
2	Treated						0.7	8092
TABLE OF B MEANS								
1	Bengal						1.4	8601
2	Wells						1.1	7957
3	Francis						1.3	8790
4	LM-1						0.4	7199
TABLE OF AB MEANS								
1	Untreated						1.8	8809
1	Bengal							
2	Treated						1.0	8393
1	Bengal							
1	Untreated						1.5	7711
2	Wells							
2	Treated						0.7	8203
2	Wells							
1	Untreated						1.8	9146
3	Francis							
2	Treated						0.8	8433
3	Francis							
1	Untreated						0.7	7057
4	LM-1							
2	Treated						0.2	7341
4	LM-1							

Table 15. Analysis of the effects of Oxolinic acid bactericide seed treatment on bacterial panicle blight and rice yield of various varieties at the Rice Research Station in Crowley, LA. 2005.

FACTORIAL/POOLED ERROR ANOVA For BPB 0-9 08-24-2005

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	Prob(F)	LSD (.05)
Total	47	28.812500				
R	5	2.937500	0.587500	1.947	0.1114	0.6
A	1	7.520833	7.520833	24.921	0.0001	0.3
B	3	7.395833	2.465278	8.169	0.0003	0.5
AB	3	0.395833	0.131944	0.437	0.7278	0.6
ERROR	35	10.562500	0.301786			

FACTORIAL/POOLED ERROR ANOVA For Yield lb/A 08-31-2005

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	Prob(F)	LSD (.05)
Total	47	65156712.628726				
R	5	3742339.965555	748467.993111	0.659	0.6568	1088
A	1	94131.213481	94131.213481	0.083	0.7751	628
B	3	18648752.775396	6216250.925132	5.473	0.0034	888
AB	3	2916595.571988	972198.523996	0.856	0.4730	1256
ERROR	35	39754893.102306	1135854.088637			

2005 Blast Flood Management Trial

Location: Rice Research Station, Crowley, LA

Soil Type: Crowley silt loam (pH 6.0, Clay 12%, Silt 71%, Sand 17%, CEC 9.4 cmole/kg)

Variety/Seed Rate: M202, Bengal, Cocodrie, XP723, Jupiter, 100 lb/A

Plot Size: 4 x 16 ft

Planting Method/Date: Drill-seeded, Apr 29

Fertilization: Preplant 24-72-72, Apr 28; preflood 130-0-0, May 29

Experimental Design: Randomized complete block design with four replications

Water Management: Flushed, May 3; permanent flood, May 25; midseason drain, June 13; reflooded, June 17

Herbicides: 4 qt Arrosolo + 1.3 oz/A Permit, May 16; Propanil 3.5 qt/A + 1.33 oz/A Aim, May 24

Insecticides: 1 oz Icon preplant, Apr 28; 2 oz/A Karate Z, July 1

Fungicides: None

Inoculation Dates: All inoculum was from natural sources

Application Equipment: None

Application Dates:

Growth Stage	Date	Time	Temp	Wind	RH	Clouds	Dew
N/A							

Disease Ratings: Leaf blast, July 5; percent heads with blast, Aug 22

Drained: Aug 7

Harvest: Aug 31

Results: See Tables 16 and 17

Comments: Leaf blast was light and neck blast severity was very light to heavy, depending on variety.

Table 16. Effect of variety and drainage on leaf blast, rotten neck blast, and rice yield at the Rice Research Station, Crowley, LA. 2005.

Disease Code							Leaf Blst	RNB	Yield
Rating Unit							0-9	%	lb/A
Rating Date							07-05-2005	09-22-2005	08-31-2005
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg			
TABLE OF R MEANS									
Replicate 1							1.3	26.4	7471
Replicate 2							1.6	32.1	7592
Replicate 3							1.0	30.2	7800
Replicate 4							0.7	26.4	7956
Replicate 5							0.8	24.2	8405
Replicate 6							0.8	25.1	8694
TABLE OF A MEANS									
1	Flooded						0.7	28.2	8259
2	Drained						1.4	26.6	7713
TABLE OF B MEANS									
1	M202						3.2	97.9	5006
2	Bengal						1.3	23.4	7873
3	Cocodrie						0.2	14.3	8375
4	XP723						0.2	0.8	10025
5	Jupiter						0.3	0.6	8652
TABLE OF AB MEANS									
1	Flooded						2.2	97.8	5333
1	M202								
2	Drained						4.2	98.0	4679
1	M202								
1	Flooded						0.8	28.8	8286
2	Bengal								
2	Drained						1.8	18.0	7461
2	Bengal								
1	Flooded						0.2	13.5	8072
3	Cocodrie								
2	Drained						0.2	15.0	8679
3	Cocodrie								
1	Flooded						0.0	0.3	10637
4	XP723								
2	Drained						0.3	1.3	9413
4	XP723								
1	Flooded						0.2	0.5	8969
5	Jupiter								
2	Drained						0.5	0.7	8335
5	Jupiter								

Table 17. Analysis of the effects of variety and drainage on leaf blast, rotten neck blast, and rice yield at the Rice Research Station, Crowley, LA. 2005.

FACTORIAL/POOLED ERROR ANOVA For Leaf Blst 0-9 07-05-2005

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	Prob(F)	LSD (.05)
Total	59	115.933333				
R	5	6.133333	1.226667	3.798	0.0059	0.5
A	1	8.066667	8.066667	24.977	0.0001	0.3
B	4	79.600000	19.900000	61.617	0.0001	0.5
AB	4	7.600000	1.900000	5.883	0.0007	0.7
ERROR	45	14.533333	0.322963			

FACTORIAL/POOLED ERROR ANOVA For RNB % 09-22-2005

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	Prob(F)	LSD (.05)
Total	59	81732.400000				
R	5	474.600000	94.920000	2.296	0.0609	5.8
A	1	38.400000	38.400000	0.929	0.3403	3.4
B	4	79035.733333	19758.933333	478.022	0.0001	5.3
AB	4	323.600000	80.900000	1.957	0.1174	7.5
ERROR	45	1860.066667	41.334815			

FACTORIAL/POOLED ERROR ANOVA For Yield lb/A 08-31-2005

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	Prob(F)	LSD (.05)
Total	59	221427598.352545				
R	5	11334769.626175	2266953.925235	2.816	0.0269	811
A	1	4472531.308442	4472531.308442	5.557	0.0228	468
B	4	163736113.847519	40934028.461880	50.857	0.0001	740
AB	4	5664275.148394	1416068.787098	1.759	0.1538	1047
ERROR	45	36219908.422016	804886.853823			

2005 Blast Fungicide Trial on M202

Location: Rice Research Station, Crowley, LA

Soil Type: Crowley silt loam (pH 6.0, Clay 12%, Silt 71%, Sand 17%, CEC 9.4 cmole/kg)

Variety/Seed Rate: M202, 100 lb/A

Plot Size: 4 x 16 ft

Planting Method/Date: Drill-seeded, Apr 29

Fertilization: Preplant 24-72-72, Apr 28; preflood 130-0-0, May 29

Experimental Design: Randomized complete block design with four replications

Water Management: Flushed, May 3; permanent flood, May 25

Herbicides: 4 qt Arrosolo + 1.3 oz/A Permit, May 16; Propanil 3.5 qt/A + 1.33 oz/A Aim, May 24

Insecticides: 1 oz Icon preplant, Apr 28; 2 oz/A Karate Z, July 1

Fungicides: Various, see Table 18

Inoculation Dates: All inoculum was from natural sources

Application Equipment: CO_2 backpack sprayer, 8002 tips, 15 gal/A

Application Dates:

Growth Stage	Date	Time	Temp	Wind	RH	Clouds	Dew
B	July 1	9:15 am	86F	38 mph	88%	30%	mod
H	July 12	7:30 am	78F	6 mph	92%	60%	heavy
H+5	July 18	7:00 am	76F	0 mph	95%	100%	heavy
H+10	July 22	8:00 am	75F	0 mph	92%	80%	heavy
H+15	July 27	9:00 pm	81F	3 mph	58%	5%	mod

Disease Ratings: Percent heads with blast, Aug 3

Drained: Aug 7

Harvest: Aug 18

Results: See Table 18

Comments: Blast severity was moderate to heavy.

Table 18. Effect of various fungicides, rates, and timings against rotten neck blast, rice yield, and milling on the variety M202 at the Rice Research Station, Crowley, LA. 2005.

Pathogen Code						RNB	Yield	Milling	Milling
Rating Unit						% Heads	lb/A	% Whole	% Total
Rating Date						08-03-2005	08-18-2005	09-14-2005	09-14-2005
Trt No.	Treatment Name	Form Amt	Fm Ds	Rate	Rate Unit	Grow Stg				
1	Unsprayed Check						66.3 abc	3125 j	43.3 d-g	60.3 b-g
2	Quadris	2.08	SC	12	OZ/A	B & H	30.5 gh	7120 abc	53.6 a-d	63.9 a-e
3	Quadris	2.08	SC	9	OZ/A	B & H	28.5 gh	6800 abc	57.3 ab	65.9 abc
4	Quadris	2.08	SC	6	OZ/A	B & H	29.3 gh	6725 abc	55.8 ab	65.2 abc
5	Quadris	2.08	SC	12	OZ/A	H	34.8 fgh	5476 d-g	55.6 ab	59.1 c-g
6	Quadris	2.08	SC	9	OZ/A	H	33.3 fgh	6408 b-e	58.7 a	67.4 ab
7	Quadris	2.08	SC	6	OZ/A	H	45.0 d-g	4971 fgh	47.8 b-f	61.2 b-f
8	Quadris	2.08	SC	9	OZ/A	H+5	49.0 c-f	4742 ghi	42.0 efg	56.7 efg
9	Quadris	2.08	SC	9	OZ/A	H+10	68.3 ab	3644 ij	41.4 fg	57.8 d-g
10	Quadris	2.08	SC	9	OZ/A	H+15	78.3 a	3031 j	44.7 c-g	59.4 c-g
11	Quadris	2.08	SC	9	OZ/A	B	66.5 abc	4023 hij	38.8 fg	55.0 fg
12	Quadris	2.08	SC	12	OZ/A	B	75.0 a	3954 hij	36.2 g	53.3 g
13	Gem	25	WG	6	OZ WT/A	H	25.5 h	6863 abc	53.4 a-d	64.2 a-d
14	Gem	25	WG	8	OZ WT/A	H	32.8 fgh	7453 ab	54.5 abc	63.5 a-e
15	Gem	25	WG	6	OZ WT/A	B & H	35.5 e-h	6079 c-f	52.2 a-e	63.1 a-e
16	Stratego	2.18	EC	16	OZ/A	H	27.3 gh	6588 a-d	60.4 a	67.5 ab
17	Stratego	2.18	EC	19	OZ/A	H	29.5 gh	6425 b-e	60.1 a	67.5 ab
18	Stratego	2.18	EC	16	OZ/A	B & H	19.3 h	7819 a	61.3 a	68.5 a
19	Gem	25	WG	8	OZ WT/A	H+5	52.8 b-e	5480 d-g	57.3 ab	66.1 abc
20	Gem	25	WG	8	OZ WT/A	H+10	53.5 bcd	5293 efg	52.8 a-d	63.6 a-e
21	Gem	25	WG	8	OZ WT/A	H+15	69.5 ab	3547 ij	41.5 efg	55.3 fg
22	Unsprayed check						77.5 a	3278 j	40.7 fg	55.7 fg
LSD (P=.05)							17.85	1235.8	10.76	7.25
Standard Deviation							12.62	873.9	5.17	3.48
CV							27.03	16.18	10.26	5.64
Replicate F							0.054	4.681	0.364	2.466
Replicate Prob(F)							0.9835	0.0051	0.5527	0.1313
Treatment F							9.581	12.286	4.706	3.645
Treatment Prob(F)							0.0001	0.0001	0.0004	0.0023

Means followed by same letter do not differ significantly (P=.05, LSD).

2005 Blast Fungicide Trial on Bengal

Location: Rice Research Station, Crowley, LA

Soil Type: Crowley silt loam (pH 6.0, Clay 12%, Silt 71%, Sand 17%, CEC 9.4 cmole/kg)

Variety/Seed Rate: Bengal, 100 lb/A

Plot Size: 4 x 16 ft

Planting Method/Date: Drill-seeded, Apr 29

Fertilization: Preplant 24-72-72, Apr 28; preflood 130-0-0, May 29

Experimental Design: Randomized complete block design with four replications

Water Management: Flushed, May 3; Permanent flood, May 25

Herbicides: 4 qt Arrosolo + 1.3 oz/A Permit, May 16; Propanil 3.5 qt/A + 1.33 oz/A Aim May 24

Insecticides: 1 oz Icon preplant, Apr 28; 2 oz/A Karate Z, July 1

Fungicides: Various, see Table 19

Inoculation Dates: All inoculum was from natural sources

Application Equipment: CO_2 backpack sprayer, 8002 tips, 15 gal/A

Application Dates:

Growth Stage	Date	Time	Temp	Wind	RH	Clouds	Dew
B	July 11	9:00 am	81F	3 mph	88%	0%	heavy
H	July 21	7:00 am	78F	0 mph	92%	30%	heavy
H+5	July 26	9:00 am	84F	3 mph	80%	30%	heavy
H+10	Aug 1	8:40 am	80F	3 mph	65%	5%	mod.
H+15	Aug 5	1:30 pm	92F	0 mph	68%	70%	mod

Disease Ratings: Percent heads with blast, Aug 8

Drained: Aug 7

Harvest: Aug 28

Results: See Table 19

Comments: Blast severity was light to moderate.

Table 19. Effect of fungicide rate and timing on blast development and yield of Bengal rice at the Rice Research Station, in Crowley, LA. 2005.

Pathogen Code							RNB	Yield	Yield	Milling	Milling
Rating Unit							%	lb/A	Increase	% Whole	% Total
Rating Date							08-08-2005	08-28-2005	08-28-2005	09-12-2005	09-12-2005
Trt No.	Treatment Name	Form Amt	Fm Ds	Rate	Rate Unit	Grow Stg					
1	Unsprayed Check						17.0 ab	8971 f	0 f	62.4 bc	69.2 ab
2	Quadris	2.08	SC	12	OZ/A	B & H	8.3 efg	10003 ab	1032 ab	64.2 abc	69.9 ab
3	Quadris	2.08	SC	9	OZ/A	B & H	7.5 fg	9728 a-d	757 a-d	63.9 abc	69.5 ab
4	Quadris	2.08	SC	6	OZ/A	B & H	9.3 d-g	9851 abc	880 abc	65.2 a	70.5 a
5	Quadris	2.08	SC	12	OZ/A	H	10.5 c-g	9806 a-d	835 a-d	63.8 abc	69.1 ab
6	Quadris	2.08	SC	9	OZ/A	H	11.3 c-f	9412 c-f	441 c-f	63.4 abc	69.6 ab
7	Quadris	2.08	SC	6	OZ/A	H	11.0 c-g	9545 a-f	574 a-f	63.8 abc	69.5 ab
8	Quadris	2.08	SC	9	OZ/A	H+5	14.3 bc	9245 def	274 def	63.3 abc	68.8 ab
9	Quadris	2.08	SC	9	OZ/A	H+10	12.3 cde	9401 c-f	431 c-f	61.9 c	68.1 ab
10	Quadris	2.08	SC	9	OZ/A	H+15	7.8 fg	9357 c-f	386 c-f	63.0 abc	69.0 ab
11	Quadris	2.08	SC	9	OZ/A	B	11.0 c-g	9518 b-f	547 b-f	63.7 abc	69.9 ab
12	Quadris	2.08	SC	12	OZ/A	B	8.3 efg	9536 a-f	565 a-f	64.2 abc	69.5 ab
13	Gem	25	WG	6	OZ WT/A	H	8.3 efg	9787 a-d	816 a-d	64.2 abc	69.8 ab
14	Gem	25	WG	8	OZ WT/A	H	9.3 d-g	9808 a-d	837 a-d	63.8 abc	70.0 ab
15	Gem	25	WG	6	OZ WT/A	B & H	7.0 g	9916 abc	945 abc	62.8 abc	68.9 ab
16	Stratego	2.18	EC	16	OZ/A	H	7.8 fg	10046 ab	1075 ab	63.6 abc	69.7 ab
17	Stratego	2.18	EC	19	OZ/A	H	7.0 g	10105 a	1135 a	63.7 abc	66.6 b
18	Stratego	2.18	EC	16	OZ/A	B & H	7.0 g	9802 a-d	831 a-d	63.4 abc	68.9 ab
19	Gem	25	WG	8	OZ WT/A	H+5	11.3 c-f	10046 ab	1075 ab	64.7 ab	70.0 a
20	Gem	25	WG	8	OZ WT/A	H+10	12.8 cd	9574 a-e	603 a-e	62.9 abc	69.3 ab
21	Gem	25	WG	8	OZ WT/A	H+15	8.3 efg	9000 ef	30 ef	62.5 abc	68.7 ab
22	Unsprayed check						20.8 a	9031 ef	60 ef	62.1 bc	68.8 ab
LSD (P=.05)							4.22	577.7	577.7	2.69	3.38
Standard Deviation							2.99	408.5	408.5	1.29	1.62
CV							28.87	4.25	63.61	2.03	2.35
Replicate F							4.972	10.347	10.345	1.401	0.023
Replicate Prob(F)							0.0037	0.0001	0.0001	0.2499	0.8809
Treatment F							5.445	2.861	2.861	0.801	0.506
Treatment Prob(F)							0.0001	0.0007	0.0007	0.6925	0.9370

Means followed by same letter do not differ significantly (P=.05, LSD).

2005 Lake Arthur Fungicide Trial

Location: Errol Lounsberry Farm, Lake Arthur, LA

Soil Type: Crowley silt loam (pH 6.0, Clay 12%, Silt 71%, Sand 17%, CEC 9.4 cmole/kg)

Variety/Seed Rate: CL161, 100 lb/A

Plot Size: 4 x 16 ft

Planting Method/Date: Drill-seeded, Mar 30

Fertilization: Preplant 0-52-52, Mar 14; preflood 47-0-0, May 3

Experimental Design: Randomized complete block design with four replications

Water Management: Flushed, Apr 14 and 22; permanent flood, May 6

Herbicides: 3 qt Duet + 5 oz/A Permit, Apr 21

Insecticides: 1 oz/100 wt Icon seed treatment, Mar 23

Fungicides: Various, see Table 20

Inoculation Dates: Inoculum from natural sources

Application Equipment: CO_2 backpack sprayer, 8002 tips, 15 gal/A

Application Dates:

Growth Stage	Date	Time	Temp	Wind	RH	Clouds	Dew
B	June 20	11:40 am	80F	0 mph	35%	5%	None

Disease Ratings: Sheath blight severity ratings, July 21

Drained: July 25

Harvest: Aug 1

Results: See Table 20

Comments: Sheath blight severity was severe; other diseases were light.

Table 20. Effect of fungicide applications on sheath blight development and rice yield and milling at the Lounsberry Farm, Lake Arthur, LA. 2005.

Pathogen Code							SB	SB	Yield	Milling	Milling
Part Rated							%Till.				
Rating Unit								0-9	lb/A	% Whole	% Total
Rating Date							07-21-2005	07-25-2005	08-11-2005	09-16-2005	09-16-2005
Trt No.	Treatment Name	Form Amt	Fm Ds	Rate	Rate Unit	Grow Stg					
1	Unsprayed Check						96.8 a	8.0 a	6824 e	50.1 c	63.8 c
2	Tilt	3.6	EC	10	FL OZ/A	B	71.4 b	7.4 ab	7098 de	55.6 ab	66.3 a
3	Quadris	2.08	SC	9	FL OZ/A	B	36.4 c	5.4 cde	7379 cde	54.6 ab	65.4 abc
4	Quadris	2.08	SC	12	FL OZ/A	B	34.0 c	5.0 e	8751 a	55.1 ab	64.6 abc
5	Stratego	2.08	EC	16	FL OZ/A	B	36.0 c	5.2 de	8213 abc	54.4 ab	64.9 abc
6	Gem	25	DF	8	OZ/A	B	44.4 c	5.8 cd	7880 bcd	54.5 ab	65.0 abc
7	Moncut	70	DF	1.0	LB/A	B	44.0 c	6.0 c	8170 abc	53.3 bc	64.3 bc
8	Moncut	4	SC	23	FL OZ/A	B	81.0 ab	7.0 b	7178 de	55.3 ab	64.4 bc
9	Quilt	1.66	SC	28	FL OZ/A	B	39.8 c	5.4 cde	8337 ab	53.9 ab	64.2 bc
10	Quilt	1.66	SC	34	FL OZ/A	B	42.0 c	5.4 cde	8471 ab	56.7 a	65.9 ab
LSD (P=.05)							16.54	0.66	857.8	3.21	1.83
Standard Deviation							12.94	0.51	671.1	1.42	0.81
CV							24.6	8.47	8.57	2.61	1.25
Replicate F							4.171	0.873	1.523	17.054	50.741
Replicate Prob(F)							0.0071	0.4894	0.2161	0.0026	0.0001
Treatment F							14.655	20.430	4.883	3.115	1.908
Treatment Prob(F)							0.0001	0.0001	0.0003	0.0529	0.1749

Means followed by same letter do not differ significantly (P=.05, LSD).

2005 Jeff Davis Fungicide Trial

Location: Jimmy Hoppe Farm, Fenton, LA

Soil Type: Crowley silt loam (pH 6.0, Clay 12%, Silt 71%, Sand 17%, CEC 9.4 cmole/kg)

Variety/Seed Rate: Cocodrie, 120 lb/A

Plot Size: 4 x 16 ft

Planting Method/Date: Drill-seeded, Mar 10

Fertilization: Preplant 0-54-108, Mar 10; preflood 147-0-0, Apr 28

Experimental Design: Randomized complete block design with four replications

Water Management: Flushed, Apr 16; permanent flood, Apr 29

Herbicides: 4 qt Arrosolo + 1 oz/A Permit, Apr 8; 15 oz Clincher + 1 oz Permit, Apr 27

Insecticides: 1 oz/100 wt Icon seed treatment; Mar 12; 3.5 oz/A Mustang Max, June 22

Fungicides: Various, see Table 21

Inoculation Dates: All inoculum was from natural sources

Application Equipment: CO_2 backpack sprayer, 8002 tips, 15 gal/A

Application Dates:

Growth Stage	Date	Time	Temp	Wind	RH	Clouds	Dew
B	June 16	8:30 am	76F	2 mph	87%	0%	moderate
B (JDW)	June 11	11:00 am	76F	3 mph	90%	100%	heavy
5% H	June 16	11:30 am	76F	3 mph	90%	100%	heavy

Disease Ratings: Sheath blight severity ratings, July 25; infestation level, July 21

Drained: July 21

Harvest: Aug 3

Results: See Table 21

Comments: Sheath blight severity was very high; other diseases were light in severity.

Table 21. Effect of fungicide applications on sheath blight development rice yield and milling at the Hoppe Farm, Fenton, LA. 2005.

Pathogen Code							SB	SB	Yield	Milling	Milling
Rating Unit							% Tiller	0-9	lb/A	% Whole	% Total
Rating Date							07-21-2005	07-25-2005	08-11-2005	09-15-2005	09-15-2005
Trt No.	Treatment Name	Form Amt	Fm Ds	Rate	Rate Unit	Grow Stg					
1	Unsprayed Check						93.6 a	8.0 a	7639 e	58.8 ab	67.0 a
2	Tilt	3.6	EC	10	FL OZ/A	B	88.4 ab	7.6 ab	8371 d	55.7 c	64.0 b
3	Quadris	2.08	SC	9	FL OZ/A	B	51.2 c	6.0 cd	9190 ab	60.5 a	67.7 a
4	Quadris	2.08	SC	12	FL OZ/A	B	40.8 cd	6.0 cd	8692 bcd	60.1 a	68.0 a
5	Stratego	2.08	EC	16	FL OZ/A	B	73.4 b	7.2 b	9225 ab	56.9 bc	65.4 ab
6	Gem	25	DF	8	OZ/A	B	54.0 c	6.2 c	8569 cd	57.7 abc	65.8 ab
7	Moncut	70	DF	1.0	LB/A	B	34.2 d	5.8 cd	8645 bcd	60.1 a	68.0 a
8	Moncut	4	SC	23	FL OZ/A	B	49.0 cd	6.2 c	8959 bcd	58.9 ab	67.3 a
9	Quilt	1.66	SC	28	FL OZ/A	B	39.8 cd	5.4 d	9592 a	57.9 abc	66.6 ab
10	Quilt	1.66	SC	34	FL OZ/A	B	40.2 cd	5.4 d	9149 abc	59.1 ab	67.5 a
LSD (P=.05)							15.57	0.67	595.1	2.89	2.82
Standard Deviation							12.18	0.52	465.6	1.28	1.25
CV							21.58	8.23	5.29	2.18	1.87
Replicate F							4.668	2.613	1.170	2.021	2.253
Replicate Prob(F)							0.0039	0.0514	0.3404	0.1889	0.1676
Treatment F							15.190	14.911	6.993	2.896	2.226
Treatment Prob(F)							0.0001	0.0001	0.0001	0.0645	0.1245

Means followed by same letter do not differ significantly (P=.05, LSD).

2005 Sheath Blight Stink Bug Spray Interactions

Location: Rice Research Station, Crowley, LA

Soil Type: Crowley silt loam (pH 6.0, Clay 12%, Silt 71%, Sand 17%, CEC 9.4 cmole/kg)

Variety/Seed Rate: Lemont, 100 lb/A

Plot Size: 4 x 16 ft

Planting Method/Date: Drill-seeded, May 26

Fertilization: Preplant 0-72-72, May 19; preflood 120-0-0, June 21; topdressed 21-0-0, July 22

Experimental Design: Randomized complete block design with five replications

Water Management: Permanent flood, June 22

Herbicides: 1 qt Stam + 4 qt Arrosolo, June 109

Insecticides: 1 oz/100 wt Icon seed treatment, Apr 28; see Table 22

Fungicides: Various, see Table 22

Inoculation Dates: Sheath blight inoculated, Aug 2

Application Equipment: CO_2 backpack sprayer, 8002 tips, 15 gal/A

Application Dates:

Growth Stage	Date	Time	Temp	Wind	RH	Clouds	Dew
20% Heading	Aug 22	9:30 am	79 F	6 mph	80%	30%	light
Post heading	Aug 24	9:00 am	79 F	3 mph	75%	70%	moderate

Disease Ratings: Sept 21

Drained: Sept 7

Harvest: Sept 22

Results: See Table 22

Comments: Sheath blight severity was moderate and stink bug severity was light.

Table 22. Effects of sheath blight fungicide and stink bug insecticide sprays on disease development, yield, and milling of Lemont rice at the Rice Research Station, Crowley, LA. 2005.

Disease Code						SB	Yield	Milling	Milling
Rating Data Type								Whole	Total
Rating Unit						% tiller	lb/A	%	%
Rating Date						09-19-2005	09-22-2005	11-09-2005	11-09-2005
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg			
1	Unsprayed Check						82.8 a	5217 a	60.5 ab	69.0 ab
2	Quadris	2.08	SC	9	OZ/A	H	78.2 ab	5398 a	61.3 ab	69.2 ab
3	Quadris	2.08	SC	9	OZ/A	H	73.0 abc	5285 a	60.6 ab	69.4 ab
	Karate Z	2.08	SC	2	OZ/A	H				
4	Quadris	2.08	SC	9	OZ/A	HStink	72.0 abc	5864 a	61.8 a	69.6 ab
5	Quadris	2.08	SC	9	OZ/A	HStink	63.0 c	6194 a	62.5 a	70.0 a
	Karate Z	2.08	SC	2	OZ/A	HStink				
6	Karate Z	2.08	SC	2	OZ/A	H	83.4 a	5687 a	59.2 b	68.6 b
7	Karate Z	2.08	SC	2	OZ/A	HStink	68.8 bc	5603 a	61.2 ab	69.7 a
LSD (P=.05)							13.63	1068.5	2.33	1.06
Standard Deviation							10.44	816.5	1.78	0.81
CV							14.03	14.56	2.92	1.17
Replicate F							4.219	1.175	1.043	1.984
Replicate Prob(F)							0.0100	0.3479	0.4069	0.1307
Treatment F							2.560	0.894	1.692	1.683
Treatment Prob(F)							0.0464	0.5156	0.1682	0.1704

Means followed by same letter do not differ significantly (P=.05, LSD).

DISEASE RESISTANCE AND MANAGEMENT IN RICE [1]

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INTRODUCTION

Sheath blight (SB) is the most serious rice disease in Louisiana because of its endemic, and occasionally epidemic, development each year and also because of the significant yield losses experienced by Louisiana rice growers. Bacterial panicle blight (BPB), identified by our laboratory in 1996, is a seedborne disease of rice that affects the florets in developing panicles and causes linear, bordered sheath lesions. In years of unusually high temperatures at night, the disease can reduce potential yields up to 40%. The use of resistant cultivars, if they were available, would be the best way to control both of these diseases. At this time, only partial resistance is known for both diseases. The sources for SB resistance used in our program have different genes for partial resistance and were crossed with susceptible commercial cultivars, our elite resistant lines, and lines from our progeny row selections. Nurseries to determine the resistance levels of lines and varieties currently being used in the rice breeding program to BPB were conducted the last 4 years. Several sources of high-level partial resistance to BPB were identified, including Nipponbare, Teqing, AB649, LM-1, and LA2065. These materials were used as resistant parents in reciprocal crosses with Cocodrie, a susceptible commercial variety.

Germplasm and all progeny rows for SB and BPB resistance were evaluated in field nurseries at the Rice Research Station in Crowley, Louisiana, for disease resistance, agronomic characteristics, and yield potential in the 2005 season. Selected progeny rows harvested in 2004 and found to have the grain quality characteristics required by the rice industry were placed in the Rice Breeding/Rice Pathology yield test at the Rice Research Station for yield testing and for further disease evaluation in 2005. The intent of the current program is to identify resistance sources to SB and BPB, to determine the mode-of-inheritance of high-level partial resistance in newly obtained resistance sources, selected cultivars, and elite lines, and to transfer genes conferring partial resistance to lines typical of American long- and medium-grain varieties. The lines will be further tested in the Rice Breeding Program for use as resistance sources. Another purpose of this research is to co-transfer the β-glucanase, chitinase, and thionin genes through a gene delivery system (gene gun) and to explore the potential for rice SB/BPB control using alien resistance genes (transgenes).

MATERIALS AND METHODS AND RESULTS

Development of SB-Resistant Lines

Resistance sources and crosses. Our SB resistance sources include LSBR-5, LSBR-33, H4/CODF, Taducan, Rice/Grass, Teqing, Jasmine 85, Leah, Katy, Yangdao-4, Yangdao-6, Earl, Bengal, other varieties, and selected lines with combined SB resistance sources from our breeding program. Crosses were made in 1997 to 2004 based on the modified recurrent selection scheme that we have been using for many years. F_2 populations from these crosses were evaluated in the field during the 2001-2004 seasons and panicle rows through the F_8 generation planted, inoculated, and evaluated in 2005.

Inoculation and evaluation for SB resistance. An autoclaved grain:rice hull (1:2) mixture was inoculated with *Rhizoctonia solani* Kühn (isolate #LR 172) and cultured at room temperature for 48 hours. This grain-rice hull mixture was used as inoculum in all 6-ft panicle rows and yield plots. Each row was inoculated evenly at the late tillering/green-ring stages of growth with 50 ml inoculum per row by hand. Rows were evaluated for SB resistance at maturity based on the standard SB rating scale (0-9).

The cultivar M201, highly susceptible to the rice blast disease, was planted around each set of progeny rows and yield tests. Naturally occurring blast infected M201, which served as a source of inoculum to the progeny rows. All progeny rows were evaluated for blast resistance at green-ring and maturity and all rows showing rice blast infection were discarded.

[1] This research is supported in part by funding provided by rice producers through the Louisiana Rice Research Board.

Selection of SB-resistant progeny rows. Lines/plants with both SB and blast resistances, as well as good agronomic characteristics, were selected for advancement in our program or for further testing in the Rice Breeding Program.

Field management. See following Field Test Method Sheets:

1. Field Test Methods - 2005 Progeny Rows

Location: Rice Research Station, Crowley, LA

Soil Type: Crowley silt loam (ph 6.0, Clay 12%, Silt 71%, Sand 17%, CEC 9.4 cmole/kg)

Plot Size: One 6-ft row/plot

Planting Method: Hege Planter (drill seeded), Apr 13-14

Fertilization: Preplant 24-72-72, Apr 13; preflood 130-0-0, May 2

Experimental Design: Sequentially planted panicle/progeny rows and check variety rows

Water Management: Flushed, April 21, May 2; permanent flood, May 24

Herbicides: 4 qt Rice shot, May 10; 4 qt propanil + 1.33 oz/A Permit, May 23

Insecticides: 1 oz Icon preplant, Apr 13

Inoculation Dates: 50 ml/row of *Rhizoctonia solani* culture grown on rice hull mixture, June 17

Drained: Allowed to dry naturally

Harvest: At maturity

Comments: Environmental conditions were excellent for SB development in 2005, with susceptible check varieties having 7 to 9 ratings. Three to five panicles were collected from desirable germplasm to be advanced to next year's tests. Five to 10 panicles were collected from rows harvested for the 2006 yield tests. Progeny rows considered resistant had SB ratings of 1 to 4.

During the past 6 years of this project, 96,280 progeny rows were inoculated with *R. solani*, evaluated for SB development, and superior lines were advanced to yield trials. Progeny rows were developed from 1026 crosses among SB resistance sources, commercial varieties, and breeding lines with different sources of genes for partial resistance and superior agronomic characteristics. A total of 7800 panicle/progeny rows were planted and inoculated with *R. solani* in 2005 for disease resistance evaluations. Field evaluations of germplasm for SB and blast resistance included 2703 progeny rows from F_6 and higher generations, 467 F_5 progeny rows, 1993 F_4 progeny rows, 1700 F_3 rows, and 737 rows for germplasm increase. In 2005, a total of 125 advanced SB-resistant lines were selected and harvested to obtain grain quality and yield data in the joint breeding/pathology yield test in 2006, and several thousand panicles were selected from progeny rows for advancing as panicle rows in 2006.

The SB yield test was conducted in 2005 in cooperation with Drs. Xueyan Sha and Don Groth to test 130 breeding lines selected in 2004 for their resistance to SB, yield potential, and agronomic characteristics (height, days to maturity, lodging). The six check varieties Bengal, Cheniere, Cocodrie, Francis, Pirogue, and Wells were planted with the lines for comparison purposes. The experimental lines were grown in yield plots using standard rice production practices and a split plot design with two replicates. In each replicate, one plot (split) was inoculated with *R. solani* grown on a rice grain:rice hull mixture and one plot was not inoculated (healthy rice) for determination of the effect of SB infection on yield. The lines and varieties were rated for SB development at maturity.

2. Field Test Methods - Sheath Blight Yield Test

Location: Rice Research Station, Crowley, LA

Soil Type: Crowley silt loam (ph 6.0, Clay 12%, Silt 71%, Sand 17%, CEC 9.4 cmole/kg)

Plot Size: 4 x 12 ft

Planting Method: Drill seeded, Mar 29

Fertilization: Preplant 24-72-72, Mar 25; preflood 130-0-0, May 2

Experimental Design: Split-plot block design with two replications

Water Management: Flushed, Apr 7, Apr 21; permanent flood, May 3

Herbicides: 4 qt propanil, Apr 15; 4 qt Arrosolo, Apr 27; 16 oz/A Clincher + 2.66 oz Permit, May 2

Insecticides: 1 oz Icon preplant, Mar 28

Inoculation Dates: 200 ml/plot of *Rhizoctonia solani* culture grown on a rice grain:rice hull mixture, June 9

Drained: July 29

Harvest: Aug 25, with a small-plot combine

Comments: There was excellent SB development in this test in 2005. Susceptible commercial variety checks had SB ratings from 7 to 9. Variety controls in this test were entries 130 (Bengal), 131 (Cocodrie), 132 (Cheniere), 133 (Francis), 134 (Pirogue), and 135 (Trenasse) (Table 1).

Table 1. 2005 sheath blight breeding line test for resistance, yield, and agronomic characteristics.

Non-inoculated 2005 entry (#)	Height (cm)	Days to heading	Yield (lb/A at 12% moisture) Rep 1	Yield (lb/A at 12% moisture) Rep 2	Mean yield (lb/A at 12% moisture)	Inoculated 2005 entry (#)	Yield (lb/A at 12% moisture) Rep 1	Yield (lb/A at 12% moisture) Rep 2	Mean yield (lb/A at 12% moisture)
38	92	97	10206	9983	10094	4-I	9339	9118	9229
16	109	105	9407	10757	10082	26-I	9114	8945	9030
30	96	103	10346	9512	9929	30-I	9021	9037	9029
50	99	98	9871	9832	9852	8-I	9998	8054	9026
28	96	102	10479	9206	9842	73-I	9588	8234	8911
26	98	103	8896	10006	9451	92-I	10436	7329	8882
18	102	111	9000	9879	9439	45-I	8835	8867	8851
11	94	103	7840	10886	9363	50-I	9844	7735	8790
125	106	94	8904	9504	9204	9-I	8978	8586	8782
7	93	104	9616	8748	9182	134-I	7609	9739	8674
8	91	104	9053	9224	9139	63-I	9205	8098	8652
48	95	104	9429	8702	9065	48-I	9091	8104	8597
119	85	110	8287	9428	8857	96-I	8772	8223	8497
9	109	104	8806	8907	8856	38-I	8810	8154	8482
91	92	105	9513	8159	8836	127-I	8335	8495	8415
70	100	110	8950	8661	8805	119-I	8556	7952	8254
60	94	112	9041	8569	8805	28-I	8200	8287	8244
93	93	96	8349	9241	8795	81-I	8688	7718	8203
73	89	101	8882	8693	8788	70-I	9478	6886	8182
63	94	103	9043	8521	8782	78-I	8420	7812	8116
14	109	104	9774	7736	8755	34-I	8554	7654	8104

Continued.

Table 1. Continued.

Non-inoculated 2005 entry (#)	Height (cm)	Days to heading	Yield (lb/A at 12% moisture) Rep 1	Yield (lb/A at 12% moisture) Rep 2	Mean yield (lb/A at 12% moisture)	Inoculated 2005 entry (#)	Yield (lb/A at 12% moisture) Rep 1	Yield (lb/A at 12% moisture) Rep 2	Mean yield (lb/A at 12% moisture)
81	85	101	8547	8901	8724	93-I	8250	7934	8092
118	99	111	8922	8430	8676	58-I	8171	7896	8034
37	96	106	8425	8742	8584	52-I	8306	7727	8017
71	95	98	9325	7800	8563	67-I	8113	7883	7998
45	103	107	8787	8323	8555	32-I	8508	7485	7997
96	89	106	8123	8982	8553	7-I	-	7992	7992
58	96	105	8319	8651	8485	91-I	8315	7651	7983
65	93	102	8985	7774	8380	37-I	8221	7744	7982
75	95	105	7951	8711	8331	133-I	6756	9096	7926
25	103	95	7772	8880	8326	117-I	7918	7902	7910
132	88	-	8447	8069	8258	66-I	8584	7233	7909
24	93	106	8170	8306	8238	126-I	8477	7317	7897
135	96	101	8884	7590	8237	18-I	7203	8565	7884
78	99	106	8785	7682	8233	71-I	8542	7165	7853
4	97	106	7486	8860	8173	60-I	7736	7955	7846
124	100	92	8719	7586	8153	35-I	6381	9275	7828
40	101	104	8272	7963	8117	57-I	7629	8026	7827
133	97	-	8033	8183	8108	14-I	9042	6484	7763
52	88	105	8063	8109	8086	65-I	8675	6835	7755
32	88	103	8532	7631	8082	118-I	7422	8016	7719
64	83	102	7944	8174	8059	103-I	7435	7949	7692
19	93	106	8348	7646	7997	129-I	7035	8292	7664
72	98	102	8323	7662	7993	44-I	7699	7568	7633
35	105	103	8188	7792	7990	136-I	.	7628	7628
13	103	98	7725	8219	7972	19-I	7706	7536	7621
17	100	104	8143	7771	7957	90-I	8112	7117	7614
10	99	106	7863	8001	7932	11-I	8033	7190	7611
117	89	102	7361	8416	7888	56-I	7260	7908	7584
127	102	98	8070	7671	7870	130-I	7245	7913	7579
66	100	105	7411	8305	7858	69-I	7464	7661	7562
69	92	105	8495	7211	7853	132-I	7593	7504	7549
126	96	105	8070	7579	7825	74-I	7156	7893	7525
108	87	97	8473	7065	7769	128-I	6827	8149	7488
34	94	98	7013	8481	7747	107-I	7720	7253	7487
97	98	102	7894	7542	7718	24-I	7641	7326	7483
134	94	-	8104	7327	7715	75-I	7478	7473	7476
90	95	105	7613	7808	7710	46-I	7940	6993	7467
44	84	96	7353	8051	7702	68-I	7112	7800	7456
68	99	96	7866	7461	7663	109-I	7922	6988	7455
79	89	101	7765	7526	7645	16-I	7068	7801	7435
85	83	98	7834	7447	7641	36-I	7769	7074	7421
56	96	111	7623	7628	7625	13-I	7788	7035	7412
76	114	98	8519	6718	7618	97-I	8509	6308	7408
92	82	103	8676	6558	7617	122-I	8156	6658	7407
112	90	101	8494	6675	7585	114-I	7870	6940	7405
22	104	103	7818	7329	7573	40-I	6617	8174	7396
2	97	103	6828	8304	7566	33-I	7723	7059	7391
54	94	95	7582	7545	7564	99-I	8153	6578	7366
42	102	90	7517	7484	7500	62-I	7881	6799	7340
83	95	102	7920	6997	7459	77-I	7344	7272	7308
57	95	103	7371	7516	7444	104-I	8088	6465	7277
114	90	99	6735	8151	7443	6-I	6853	7666	7260
29	90	103	7861	7008	7435	17-I	7799	6713	7256
109	80	98	7550	7303	7426	29-I	7210	7244	7227
116	93	116	6716	8051	7383	23-I	7554	6896	7225
31	90	99	6617	8130	7373	15-I	7329	7084	7207
23	89	106	7191	7533	7362	84-I	6862	7528	7195
120	96	100	8136	6547	7342	2-I	7462	6908	7185
128	91	98	7456	7214	7335	59-I	6498	7845	7172
15	99	104	7455	7153	7304	76-I	7794	6513	7154

Continued.

Table 1. Continued.

Non-inoculated 2005 entry (#)	Height (cm)	Days to heading	Yield (lb/A at 12% moisture) Rep 1	Yield (lb/A at 12% moisture) Rep 2	Mean yield (lb/A at 12% moisture)	Inoculated 2005 entry (#)	Yield (lb/A at 12% moisture) Rep 1	Yield (lb/A at 12% moisture) Rep 2	Mean yield (lb/A at 12% moisture)
77	94	91	7784	6796	7290	85-I	7441	6850	7145
122	86	98	7435	7137	7286	64-I	7088	7172	7130
3	87	-	4683	9864	7273	72-I	7192	6989	7091
103	95	99	7730	6806	7268	125-I	6544	7578	7061
36	104	106	6511	8009	7260	100-I	7492	6614	7053
49	108	105	6940	7503	7221	21-I	7316	6762	7039
59	95	101	7241	7018	7130	22-I	6804	7262	7033
131	93	-	8905	5303	7104	43-I	6655	7312	6984
113	91	98	6903	7263	7083	79-I	7129	6784	6957
104	97	98	7046	7115	7081	89-I	6240	7672	6956
88	88	102	7348	6741	7045	1-I	7824	6063	6943
27	105	102	6512	7572	7042	98-I	7102	6765	6933
130	95	97	7528	6535	7031	101-I	7912	5925	6919
43	92	105	6644	7419	7031	53-I	7444	6366	6905
95	92	104	7040	6942	6991	112-I	6757	7035	6896
98	103	103	6979	6987	6983	3-I	6949	6783	6866
129	90	98	7543	6385	6964	113-I	6645	7076	6861
115	94	106	5937	7978	6958	54-I	7235	6358	6796
53	95	103	7426	6489	6957	131-I	6439	7019	6729
67	95	93	7235	6663	6949	49-I	6349	7076	6713
101	94	103	7385	6474	6930	39-I	6502	6904	6703
89	86	102	7062	6754	6908	95-I	6146	7228	6687
107	95	98	6392	7423	6907	42-I	7119	6242	6681
46	97	105	7059	6736	6898	87-I	6857	6488	6672
41	90	103	7244	6481	6862	88-I	6425	6866	6646
62	98	105	6762	6937	6849	5-I	5696	7567	6632
106	96	99	8117	5500	6808	27-I	6346	6847	6597
100	94	97	6831	6718	6774	94-I	6920	6263	6591
20	103	103	6461	7086	6774	86-I	7203	5862	6533
55	89	104	6951	6544	6747	41-I	.	6529	6529
136	92	91	8085	5325	6705	31-I	6103	6942	6523
99	94	101	6667	6688	6677	116-I	6386	6584	6485
86	102	106	6584	6667	6625	55-I	7118	5847	6482
39	110	104	7212	5981	6596	80-I	6771	6146	6458
33	88	99	6858	6334	6596	121-I	7003	5900	6451
84	90	99	7045	6135	6590	25-I	7927	4815	6371
74	100	102	7437	5647	6542	110-I	7963	4759	6361
94	102	102	6626	6445	6536	10-I	8864	3649	6257
47	99	99	6085	6870	6478	115-I	6378	6053	6215
87	82	102	6035	6660	6347	61-I	6204	6090	6147
80	95	105	6037	6582	6309	124-I	6274	5997	6136
21	74	96	6151	6397	6274	123-I	6695	5567	6131
123	83	106	6500	5948	6224	47-I	6551	5491	6021
51	88	104	6728	5667	6197	108-I	6287	5753	6020
102	119	92	5691	6626	6158	106-I	6026	5919	5972
121	93	106	5541	6755	6148	105-I	5596	5806	5701
61	103	96	5516	6565	6040	83-I	5589	5642	5615
105	85	118	5788	6168	5978	20-I	5365	5733	5549
5	93	95	5977	5953	5965	82-I	5631	5349	5490
6	88	103	5668	6175	5922	120-I	4671	6148	5409
111	84	99	4307	7499	5903	111-I	4664	5959	5311
1	88	94	4327	6957	5642	51-I	6230	4260	5245
82	78	106	5909	4907	5408	135-I	4447	6035	5241
110	95	101	6218	4524	5371	102-I	4944	5320	5132
12	86	104	4384	5398	4891	12-I	4762	3453	4107

* Plots inoculated with *Rhizoctonia solani* on rice grain/hull mixture.

3. Field Test Methods - Two-Plot Sheath Blight Yield Test

Location: Rice Research Station, Crowley, LA

Soil Type: Crowley silt loam (ph 6.0, Clay 12%, Silt 71%, Sand 17%, CEC 9.4 cmole/kg)

Plot Size: 4 x 12 ft

Planting Method: Drill seeded, Mar 29

Fertilization: Preplant 24-72-72, Mar 25; preflood 130-0-0, May 2

Experimental Design: Split-plot test, one split inoculated, one non-inoculated, one replication

Water Management: Flushed, Apr 7, Apr 21; permanent flood, May 3

Herbicides: 4 qt propanil, Apr 15; 4 qt Arrosolo, Apr 27; 16 oz/A Clincher + 2.66 oz Permit, May 2

Insecticides: 1 oz Icon preplant, Mar 28

Inoculation Dates: 100 ml/plot of *Rhizoctonia solani* culture grown on a rice grain:rice hull mixture, June 9

Drained: July 29

Harvest: Aug 25, with a small-plot combine

Comments: There was excellent SB development in this test. Susceptible commercial variety checks had SB ratings from 7 to 9 (Table 2).

Table 2. Two-plot sheath blight yield test.

Non-Inoculated 2005 entry (#)	Yield (lb/A at 12% moisture)	Line height (cm)	Days to heading	Inoculated 2005 entry (#)	Yield (lb/A at 12% moisture)	Sheath blight rating (0-9)	Days to heading
1	7518	86	101	1-I	6661	6	101
2	6070	84	97	2-I	6616	5	97
3	5462	85	105	3-I	6659	5	105
4	7190	92	102	4-I	8596	3	102
5	6042	78	101	5-I	6820	6	101
6	7175	88	101	6-I	5739	5	101
7	6523	91	99	7-I	3895	8	98
8	7149	78	99	8-I	6519	6	98
9	7043	100	94	9-I	6273	5	94
10	6442	94	-	10-I	8362	5	-
11	5395	90	90	11-I	4634	7	90
12	6018	96	102	12-I	7376	7	102
13	6619	100	102	13-I	5693	5	106
14	7253	93	101	14-I	6215	6	101
15	6344	90	97	15-I	6128	6	99
16	10536	110	106	16-I	6919	5	106
17	7188	81	102	17-I	5437	7	102

Continued.

Table 2. Continued.

Non-Inoculated 2005 entry (#)	Yield (lb/A at 12% moisture)	Line height (cm)	Days to heading	Inoculated 2005 entry (#)	Yield (lb/A at 12% moisture)	Sheath blight rating (0-9)	Days to heading
18	7752	93	98	18-I	7834	5	99
19	6896	94	95	19-I	5508	7	96
20	4730	83	96	20-I	4170	6	96
21	6131	98	98	21-I	6128	6	99
22	7366	90	99	22-I	-	-	-
23	7318	95	102	23-I	4652	6	102
24	6703	102	105	24-I	6069	4	105
25	7486	92	99	25-I	5576	8	101
26	6678	98	104	26-I	5541	8	104
27	8000	89	97	27-I	4815	7	98
28	6229	89	99	28-I	5820	4	99
29	6535	93	99	29-I	6923	6	99
30	6861	103	100	30-I	5301	7	98
31	7145	101	95	31-I	6864	5	96
32	8624	106	97	32-I	7341	6	96
33	8733	103	97	33-I	8407	5	97
34	6267	103	102	34-I	5301	8	102
35	7226	96	104	35-I	6621	5	104
36	7188	98	102	36-I	5645	8	102
37	7828	113	105	37-I	6613	7	102
38	6732	84	102	38-I	6922	3	102
39	6724	90	105	39-I	6289	4	105
40	6328	105	102	40-I	4674	6	99
41	5436	95	105	41-I	5850	4	105
42	6515	95	104	42-I	6025	6	104
43	7963	91	102	43-I	7562	3	102
44	6096	99	102	44-I	5616	8	102
45	7830	75	97	45-I	5491	8	98
46	6781	86	97	46-I	5280	7	97
47	7645	105	106	47-I	6173	7	106
48	9612	114	102	48-I	8572	7	102
49	8898	108	102	49-I	9346	4	102
50	9984	110	99	50-I	7121	4	99
51	6925	101	98	51-I	6145	5	98
52	7138	109	99	52-I	7345	5	98
53	7681	95	98	53-I	6593	7	98
54	7680	90	101	54-I	7706	7	98
55	6073	100	-	55-I	6066	4	-
56	7903	92	102	56-I	7922	7	102
57	8650	91	95	57-I	6844	7	101
58	7835	98	101	58-I	7596	5	101
59	3965	94	99	59-I	1257	9	99
60	6391	92	99	60-I	5136	8	98
61	6958	99	97	61-I	6713	4	97

Continued.

Table 2. Continued.

Non-Inoculated 2005 entry (#)	Yield (lb/A at 12% moisture)	Line height (cm)	Days to heading	Inoculated 2005 entry (#)	Yield (lb/A at 12% moisture)	Sheath blight rating (0-9)	Days to heading
62	8458	111	97	62-I	8066	3	97
63	7593	105	94	63-I	6111	6	94
64	9961	112	97	64-I	6125	5	97
65	7916	93	102	65-I	6735	4	102
66	6883	105	97	66-I	7064	4	97
67	5900	100	101	67-I	5522	6	101
68	7662	98	101	68-I	7122	6	102
69	9483	91	102	69-I	8449	6	102
70	7073	90	98	70-I	5998	7	98
71	8256	94	96	71-I	6049	8	96
72	8075	107	97	72-I	7272	4	97
73	6693	94	101	73-I	5232	7	101
74	6565	107	97	74-I	5508	7	97
75	5798	83	99	75-I	4801	7	99
76	7539	85	99	76-I	5967	7	99
77	8063	87	104	77-I	6629	8	104
78	7299	90	101	78-I	6890	8	101
79	6867	110	97	79-I	6324	5	97
80	5785	90	99	80-I	5673	5	98
81	5573	97	102	81-I	4207	5	102
82	3517	92	101	82-I	4048	8	101
83	8711	88	99	83-I	7829	6	99
84	6461	85	97	84-I	5874	7	97
85	5461	92	99	85-I	5596	4	102
86	7658	94	101	86-I	5774	7	100
87	8750	107	98	87-I	6540	7	99
88	7127	86	99	88-I	5633	8	98
89	6035	101	97	89-I	4983	7	97
90	6494	82	98	90-I	5086	8	99
91	9561	125	102	91-I	6406	4	102
92	5777	90	102	92-I	5871	5	102
93	7818	115	102	93-I	7074	4	102
94	6344	78	97	94-I	7086	5	96
95	8630	89	101	95-I	6612	7	101
96	7942	99	-	96-I	8828	3	-
97	8265	88	105	97-I	7108	6	105
98	8157	95	96	98-I	7293	7	96
99	7052	84	99	99-I	6648	2	99
100	5858	98	102	100-I	5287	6	102
101	5984	110	105	101-I	5189	4	105
102 TRNS*	9436	94	90	102-I	2607	8	90
103 PIRO*	9264	102	97	103-I	7661	7	97
104 CCDR*	9150	95	93	104-I	2722	9	93
105 CHNR*	8188	87	97	105-I	7123	8	98

* Commercial variety controls were Trenasse, Pirogue, Cocodrie, and Cheniere.

4. Field Test Methods - Sheath Blight Tolerance Test

Location: Rice Research Station, Crowley, LA

Soil Type: Crowley silt loam (ph 6.0, Clay 12%, Silt 71%, Sand 17%, CEC 9.4 cmole/kg)

Plot Size: 4 x 12 ft

Planting Method: Drill seeded, Mar 29

Fertilization: Preplant 24-72-72, Mar 25; preflood 130-0-0, May 2

Experimental Design: Split-plot design (inoculated/non-inoculated) with three replications

Water Management: Flushed, Apr 7, Apr 21; permanent flood, May 3

Herbicides: 4 qt propanil, Apr 15; 4 qt Arrosolo, Apr 27; 16 oz/A Clincher + 2.66 oz Permit, May 2

Insecticides: 1 oz Icon preplant, Mar 28

Inoculation Dates: 300 ml/plot of *Rhizoctonia solani* culture grown on a rice grain:rice hull mixture, June 9

Drained: July 29

Harvest: Aug 25

Comments: Lines with no difference in yield between inoculated and non-inoculated plots in yield tests in 2003 and 2004, whatever the SB rating. Test had excellent SB development with susceptible commercial variety checks having SB ratings from 7 to 9. In this experiment, entries RL12 (Trenasse), RL13 (Cocodrie), RL14 (Pirogue), and RL15 (Cheniere) were the variety controls (Table 3).

Table 3. Sheath blight yield test for tolerance.

2005 entry (#)	Yield (lb/A at 12% moisture) Rep 1	Yield (lb/A at 12% moisture) Rep 2	Yield (lb/A at 12% moisture) Rep 3	Mean Yield (lb/A at 12% moisture)	Mean height (cm)	Mean sheath blight rating (0-9)	Mean # days to heading
RL1	7531	9451	8531	8504	99	-	98
RL1-I*	8959	8497	8730	8729	-	3	98
RL2	5672	7894	8673	7413	98		99
RL2-I	5833	6284	6879	6332	-	7	99
RL3	6302	7913	8249	7488	87	-	94
RL3-I	7132	7655	7247	7345	-	8**	94
RL4	7742	7895	8589	8075	90	-	97
RL4-I	8416	7146	7960	7841	--	7**	97
RL5	6794	8182	8344	7773	93	-	97
RL5-I	8477	7921	7927	8108	-	6**	98
RL6	8700	8679	9124	8834	91	-	98
RL6-I	7578	8168	7186	7644	-	6	98
RL7	6968	7301	5658	6642	85	-	99
RL7-I	7213	6445	6187	6615	-	7**	100
RL8	8671	6553	8278	7834	92	-	95
RL8-I	7314	7090	7566	7324	-	3	95
RL9	6844	6782	5577	6401	92	-	102
RL9-I	5774	6191	6475	6146	-	6	102
RL10	5697	7993	7511	7067	87	-	97
RL10-I	5781	6863	6582	6409	-	7	98
RL11	6549	7773	6397	6906	91	-	96
RL11-I	7039	7782	7169	7330	-	7**	96
RL12	7921	8348	8170	8146	97	-	93
RL12-I	3171	3242	4370	3595	-	9	94
RL13	7624	8254	7686	7855	91	-	95
RL13-I	4328	4242	4655	4408	-	9	95
RL14	8298	8315	8694	8436	91	-	98
RL14-I	8208	8007	7378	7864	-	6	98
RL15	8126	5619	3840	5862	87	-	96
RL15-I	6772	6225	6236	6411	-	8	96

* Plots inoculated with *Rhizoctonia solani* on rice grain/hull mixture.
**These experimental lines appear to exhibit tolerance instead of resistance or susceptibility.

Seventeen lines out-yielded all check varieties in the non-inoculated plots with yields from 8922 to 10,479 lb/A. Sixty lines in inoculated plots out-yielded the check varieties, with Pirogue being the highest yielding variety when inoculated. These lines yielded from 7629 to 10,436 lb/A when inoculated. Several lines yielded higher when inoculated than when not inoculated. These lines had 2 to 4 ratings on the 0-9 SB rating scale. When a line is very resistant, yields tend to increase after inoculation as the pathogen produces growth regulating compounds. In the two-plot yield test, five lines out-yielded all of the check varieties, except for Earl, when not inoculated. Earl was the highest yielding entry in the test when not inoculated. Several lines were high yielding whether inoculated or not inoculated. For example, entry 49 yielded 9346 lb/A when inoculated and 8898 lb/A when not inoculated. These yield tests have provided information that will allow us to select up to 30 lines for a replicated test in 2006. The lines

are high yielding, SB resistant, and have the agronomic characteristics of commercial varieties. We will recommend seven lines for inclusion by the breeding program in the 2006 Uniform Regional Rice Nursery (Table 4).

In the tolerance yield test, line MCR02-6322 averaged 8729 lb/A when inoculated and 8541 lb/A when not inoculated. The line was resistant, not tolerant, with a mean rating of 3.3. Line MCR02-0776 had a mean yield of 7841 lb/A when inoculated and 8075 lb/A when not inoculated. This line had a mean rating of 7.0, or susceptible, suggesting that it may be expressing true tolerance.

F_3 populations from crosses made with several SB resistant transgenic Taipei 309 plants and Cocodrie in 2003 were grown in 2005. The populations were inoculated with *R. solani* and individual plants rated for resistance to SB. Many plants were highly resistant to SB and will be grown as F_4 rows in 2006. Plants in a population were either very resistant or susceptible at the normal level for Taipei 309 (SB to the flag leaf or plants dying at maturity). The transgenic plants had the transgenes for chitinase and/or beta glucanase production. These are PR genes, transferred from other plants to Taipei 309, that are known to have a role in resistance to fungal diseases in the plants from which they were transferred. Taipei 309 is an Asian medium-grain variety. Most of the selected resistant plants had the long-grain character of Cocodrie. Progeny from these plants will be backcrossed to Cocodrie to develop F_2 populations for screening in 2006 field tests for high-level SB resistance and the long-grain kernels characteristic of Cocodrie.

We are cooperating with the laboratory of Dr. Svetlana Oard to transform plants with plasmid DNA having genes for production of peptides toxic to rice pathogens. This includes β-Purothionin, an antimicrobial peptide from the endosperm of wheat seeds, that was shown to exhibit the highest lytic activity among 11 antimicrobial peptides tested against *R. solani* strain LR172 in tests conducted by Dr. Oard.

Table 4. Lines recommended for the 2006 URRN from the 2005 sheath blight yield tests.

Line	Yield (I)	Yield (NI)	Mean Yield	SB Rating* Ru	SB Rating* Sha	Height (cm)	DTH	Vigor (0-9)	Milling Head	Milling Total	Grain type
04-1065	8597	9065	8831	3..5	3	95	104	4.5	58.2	69.8	LG
04-0672	8407	8733	8570	5	4	103	97	4	58.5	68.8	LG
04-6488	8254	8857	8556	4..5	3	87	110	4.0	62.9	68.7	LG
04-6483	8497	8553	8525	5.0	5	90	106	4.0	61.3	67.4	LG
03-2771	8066	8458	8262	2	5	108	97	5	59.7	71.9	MG
03-3086	8415	7870	8143	6	6	99	98	5.0	57.1	69.7	LG
04-1053	7755	8380	8068	3	3	93	102	5.0	56.7	69.4	LG
BENGAL	7579	7032	7306	5	5	95	97	3.0	59.6	68.1	MG
TRENASSE	5241	8237	6739	8	8	94	90	5.0	-	-	LG
COCODRIE	6729	8905	7817	7	8	102	93	7.5	-	-	LG
PIROGUE	7661	9264	8463	7	3	95	97	3.0	-	-	LG
CHENIERE	7123	8188	7656	8	6	87	97	4.5	-	-	LG

* Separate ratings made by Drs. M.C. Rush and X.Y. Sha.

5. Field Test Methods - Bacterial Panicle Blight Yield Test 1

Location: Rice Research Station, Crowley, LA

Soil Type: Crowley silt loam (ph 6.0, Clay 12%, Silt 71%, Sand 17%, CEC 9.4 cmole/kg)

Plot Size: 4 x 12 ft

Planting Method: Drill seeded, Mar 29

Fertilization: Preplant 24-72-72, Mar 25; preflood 130-0-0, May 2

Experimental Design: Randomized complete, split-block design, four replications

Varieties/Seed Rate: Cocodrie, 90 lb/A; Jupiter, 90 lb/A; Trenasse, 90 lb/A

Water Management: Flushed, Apr 7, Apr 21; permanent flood, May 3

Herbicides: 4 qt propanil, Apr 15; 4 qt Arrosolo, Apr 27; 16 oz/A Clincher + 2.66 oz Permit, May 2

Insecticides: 1 oz Icon preplant, Mar 28

Inoculation Dates: Sprayed with *B. glumae* with 20% of panicle emerging, rate 10^7–10^9 cfu/ml; Trenasse, June 28; Cocodrie, July 5; Jupiter, July 8

Drained: July 29

Harvest: Aug 25

Comments: The first BPB experiment was conducted using a complete randomized block, split plot design with three varieties and four replicates. One of each split plot was inoculated in each replicate. Plots were rated for BPB 4 weeks after inoculation using a 0-9 scale, where 0 means no disease and 9 means 76 to 100% of the panicle were blighted with discolored, sterile spikelets, or grains. After rating, 20 panicles were randomly collected from each plot to count and weigh the number of unfilled and filled grains. At maturity, the plots were harvested and grain yield at 12% moisture determined.

Among the three varieties tested in Experiment 1, Trenasse (rating = 8.3) and Cocodrie (rating = 7.3) were very susceptible, whereas, Jupiter (rating = 3.3) was highly significantly resistant. This was also reflected in grain yield where there was a non-significant 4.1% loss between the inoculated and non-inoculated plots of Jupiter while *B. glumae* inoculation caused a significant 20% yield loss in Trenasse and 13.4% loss in Cocodrie (Table 5).

Table 5. Susceptibility and loss among three rice cultivars to bacterial panicle blight.[a]

Variety	Non-inoculated yield (lb/A at 12% moisture)	Inoculated yield (lb/A at 12% moisture)	Mean BPB rating (0-9)	Variety mean yield (lb/A at 12% moisture)	Difference (lb/A at 12% moisture)
Cocodrie	9,532 b	8,297 b	7.3 a	8,914	-1,235 ns
Jupiter	12,058 a	11,540 a	3.3 b	11,799	-518 ns
Trenasse	9,887 b	7,921 b	8.3 a	8,898	-1,966 **

[a] Means followed by the same letter were not significantly different at the 5% level by Duncan's multiple range test, ns = not significant at the 1% level.
** = significantly different at the 1% level.

6. Field Test Methods – Bacterial Panicle Blight Yield Test 2

A second yield test was conducted in 2005 comparing the virulence of *Burkholderia gladioli* isolates from rice florets and from soil collected in rice fields to the virulence of a *B. glumae* isolate from a field-infected rice panicle. The same methods were used as in "Test 1" except that only the variety Bengal was grown and inoculated. In this experiment, four soilborne *B. gladioli* isolates (S10, 3S4, 3S5, and S15) were tested in comparison with the ATCC isolate of *B. gladioli*, a seedborne *B. gladioli* (223gr-1) isolate from Louisiana-grown rice, and *B. glumae* (Isolate 336gr-1). The rice variety Bengal was used to conduct this experiment, using a randomized complete block design with three replications for each treatment. Bacterial suspension preparation, inoculation, disease ratings, and harvesting were as previously described.

In the second experiment, three soil isolates of *B. gladioli* (S10, 3S5, and S15) caused significant panicle blighting when compared to non-inoculated plots while the seedborne *B. gladioli* and the other soil isolate, 3S4, did not cause significant panicle blighting. None of the *B. gladioli* isolates caused infections as severe on Bengal (ratings of 2.7-4.3) as that caused by *B. glumae* (rating = 8.7). Inoculation with *B. gladioli* isolates did not give significant yield loss, whereas inoculation with *B. glumae* gave a significant loss of 24.1%. Isolate S10 of *B. gladioli* gave a rating of 3.7 and a yield loss of 604 lb/A compared with the non-inoculated control plots.

RICE PRODUCTION ECONOMICS RESEARCH

M.E. Salassi

Enterprise budget projections for 2006 were developed in the fall of 2005 for alternative rice production systems. A summary of the enterprise budgeting analysis for rice production systems in Southwest Louisiana is presented in Table 1. Values presented represent direct and total estimated rice production costs per hundredweight of rice produced for selected yield levels. Direct production costs include expenses for seed, fertilizer, chemicals, fuel, labor, repairs, custom charges, and interest on operating capital. Total specified expenses include direct expenses plus fixed costs on machinery and equipment. These values can also be interpreted as the breakeven price or income per output unit required to cover total production costs. Owner-operator and tenant-operator situations were budgeted for each enterprise, and outputs from all enterprises were valued solely at a projected market price.

Rice production costs were estimated for the following types of rice production systems: water planted, drill planted, conventional variety, Clearfield variety, conventional tillage, stale seedbed, in rotation, and fallow land. Base yield levels were 57.0 cwt. per acre for water-planted rice and 60.0 cwt. per acre for drill-planted rice. Total rice production cost for a tenant operator using a water-planted, conventional variety, conventional tillage system in rotation with another crop was estimated to be $10.43 per cwt. at a 57.0 cwt. yield level. This production system on fallow land rotation added $0.50 per cwt. to production costs, resulting from additional disk operations in the year prior to planting. Stale seedbed production systems in water-planted rice had similar production cost levels compared with conventional tillage. Total production cost for stale seedbed, water-planted rice in rotation was estimated at $10.01 per cwt., $0.51 per cwt. less than conventional tillage. Production costs associated with production of Clearfield rice were estimated to be slightly higher than conventional varieties, primarily because of higher seed prices. Clearfield production costs were estimated at $10.88 per cwt. for conventional tillage in rotation and $11.38 per cwt. for conventional tillage of rice production on fallow land. Detailed enterprise budgets and supporting data were published in A.E.A. Information Series Number 236, January 2006 (Dept. of Agricultural Economics and Agribusiness, Louisiana Agricultural Experiment Station, Louisiana State University Agricultural Center).

A study was conducted to evaluate the impact of proposed reductions in farm program payments as a result of the federal budget reduction on the financial structure of representative rice farming operation entities. Four policy scenarios were simulated in the analysis: (1) Baseline scenario – continuation of current policy; (2) Scenario 1 – 5% reduction in total direct payments, counter cyclical payments, and marketing loan program benefits; (3) Scenario 2 - Loan deficiency payments paid on 85% of direct payment program yields; and (4) Scenario 3 – combination of the two-payment reduction proposals. General conclusions from the study indicated that a 5% reduction in program payments would reduce rice gross farm income by 1.1 to 1.2% and net farm income (returns above total costs) would be reduced by more than 20%, and loan deficiency payments paid on 85% of direct payment program yield (rather than actual production) would reduce rice gross farm income by approximately 2.5% and net farm income would be reduced by more than 40%.

Rising fuel and fertilizer prices in combination with relatively low rough rice market prices were anticipated to have a substantial impact on the projected cash flow of rice farms in Louisiana for the 2006 crop season. One important decision facing rice producers is “What percent of base should be planted for the 2006 season to be able to cash flow and obtain crop financing?” In addition, producers were interested in negotiating alternative rental arrangements to improve cash flow rice production. The Projected 2006 Rice Farm Cash Flow Model was developed to assist producers in planning for the 2006 crop year. The model is an Excel spreadsheet that allows rice producers to enter projected acreage, yield, market price, and production cost data for 2006 to estimate net returns above variable production costs and to easily evaluate the impact of changing percent of base planted on net returns. The primary purpose of the model is to evaluate the impact on net returns above variable production costs for alternative rice rental arrangements and percent of base acreage planted. The model also includes entry cells for whole farm fixed expenses to estimate projected returns from rice production over all costs.

Table 1. Projected Break-even Selling Prices for Rice at Selected Yield Levels, Southwest Louisiana, 2006.

Rice Production System	Total Costs	Base Yield	Yield Level (%) -20%	-10%	Base	+10%	+20%
	-(dollars/A)-	-(cwt/A)-	----------(dollars/cwt)----------				
Prices Required to Recover Total Specified Expenses:							
Southwest Louisiana:							
(1) Water Planted:							
(a) Conventional Variety:							
(i) Conventional Tillage:							
- In Rotation, Owner a/	604.21	57.0	12.94	11.64	10.60	9.75	9.04
- In Rotation, Tenant b/	415.98	39.9	12.72	11.44	10.43	9.59	8.90
- Fallow Land, Owner a/	626.34	57.0	13.42	12.07	10.99	10.10	9.37
- Fallow Land, Tenant b/	436.11	39.9	13.35	12.00	10.93	10.05	9.32
(ii) Stale Seedbed:							
- In Rotation, Owner a/	603.35	57.0	12.92	11.62	10.59	9.74	9.03
- In Rotation, Tenant b/	399.54	39.9	12.20	10.99	10.01	9.22	8.55
- Fallow Land, Owner a/	610.15	57.0	13.07	11.75	10.70	9.85	9.13
- Fallow Land, Tenant b/	419.92	39.9	12.48	11.55	10.52	9.68	8.98
(b) Clearfield Variety:							
(i) Conventional Tillage:							
- In Rotation, Owner a/	624.34	57.0	13.38	12.03	10.95	10.07	9.34
- In Rotation, Tenant b/	434.11	39.9	13.29	11.95	10.88	10.01	9.28
- Fallow Land, Owner a/	644.47	57.0	13.82	12.42	11.31	10.39	9.63
- Fallow Land, Tenant b/	454.24	39.9	13.92	12.51	11.38	10.46	9.70
(ii) Stale Seedbed:							
- In Rotation, Owner a/	603.48	57.0	12.92	11.62	10.59	9.74	9.03
- In Rotation, Tenant b/	417.67	39.9	12.77	11.49	10.47	9.63	8.93
- Fallow Land, Owner a/	628.28	57.0	13.46	12.11	11.02	10.13	9.39
- Fallow Land, Tenant b/	438.05	39.9	13.41	12.06	10.98	10.10	9.36
(2) Drill Planted:							
(a) Conventional Variety:							
(i) Conventional Tillage:							
- In Rotation, Owner a/	566.54	60.0	11.49	10.35	9.44	8.70	8.08
- In Rotation, Tenant b/	365.64	42.0	10.57	9.53	8.71	8.03	7.46
(ii) Stale Seedbed:							
- In Rotation, Owner a/	572.67	60.0	11.62	10.47	9.54	8.79	8.16
- In Rotation, Tenant b/	375.64	42.0	10.87	9.80	9.84	8.25	7.66
(b) Clearfield Variety:							
(i) Conventional Tillage:							
- In Rotation, Owner a/	602.12	60.0	12.23	11.01	10.04	9.24	8.57
- In Rotation, Tenant b/	391.82	42.0	11.35	10.23	9.33	8.60	7.98
(ii) Stale Seedbed:							
- In Rotation, Owner a/	611.54	60.0	12.43	11.19	10.19	9.38	8.70
- In Rotation, Tenant b/	410.31	42.0	11.90	10.71	9.77	9.00	8.35
(3) Ratoon Crop							
- Owner a/	157.87	16.0	11.63	10.48	9.55	8.80	8.17
- Tenant b/	97.25	11.2	10.54	9.51	8.68	8.01	7.45

a/ Land costs not included for owner operators. b/ Tenant share of yield.

RICE INSECTS RESEARCH

DINOTEFURAN: EARLY- AND LATE-SEASON TESTS

M. Stout and R. Pousson

Dinotefuran, a granular neonicotonoid insecticide, was tested for efficacy against the rice water weevil at several rates and timings in two tests. A single postflood application of Furadan (carbofuran) was included as a positive control in the early-season test.

Early-Season Test

Location: Rice Research Station, Crowley, LA

Variety/Seeding Rate: Cocodrie/90 lb/A

Plot Size: 4.1 x 18 ft (seven rows per plot at 7-inch row spacing). Each plot was surrounded by metal flashing to restrict movement of insecticides from plot to plot

Planting Method/Date: Drill-seeded/Apr 5, 2005

Fertilization/Weed Control: Standard practices

Experimental Design: Randomized complete block; eight treatments, four replications:

Trt #	Treatment	Total rate*	Timing of applications*		
			1 d preflood	6 d postflood	20 d postflood
1	UTC	--			
2	Carbofuran	0.6 lb ai/A			0.6 lb ai/A
3	Dinotefuran	240	120	120	
4	Dinotefuran	120		120	
5	Dinotefuran	120			120
6	Dinotefuran	240		240	
7	Dinotefuran	240			240
8	Dinotefuran	360			360

* Rate in gm ai/A for dinotefuran and lb ai/A for carbofuran

Dinotefuran and carbofuran applications were made by hand using a shaker jar on May 3, 10, and 24.

Water Management: Permanent flood, May 4 (rice at 3- to 4-leaf stage); drained, July 26

Sampling: Cores/plot: three or four core samples per plot

Sampling Dates: May 24 (20 dpf [days postflood]); May 31 (27 dpf); June 7 (34 dpf)

Harvest: Aug 4, using Kubota 3000 combine

Data Analysis: A mean number of larvae per core was calculated for each plot at each sampling date based on three or four core samples. Yields in grams from interior four rows of each plot were adjusted to 12% moisture. Accurate yields were not available from some plots because of a planter malfunction that resulted in missing rows. Treatment effects on numbers of larvae per core and adjusted yields were analyzed by PROC MIXED with treatment as fixed effect, block as random effect.

Results:

Treatment	Larvae per core sample ± s.e. on:		
	May 24	May 31	June 7
Untreated control	16.3 ± 4.1	20.9 ± 3.3	29.1 ± 1.8
Carbofuran	14.2 ± 1.2	6.9 ± 2.4	8.0 ± 2.9
Dinotefuran pre + 6 d post	3.1 ± 2.1	6.0 ± 1.9	10.6 ± 4.0
Dinotefuran 6 d post low rate	8.6 ± 2.9	16.9 ± 2.4	22.4 ± 2.3
Dinotefuran 6 d post mid rate	5.8 ± 3.3	12.4 ± 6.0	17.3 ± 3.4
Dinotefuran 20 d post low rate	13.5 ± 3.0	8.4 ± 4.7	8.8 ± 1.8
Dinotefuran 20 d post mid rate	20.8 ± 1.0	4.8 ± 0.6	6.5 ± 1.5
Dinotefuran 20 d post high rate	12.0 ± 2.4	3.3 ± 0.9	1.6 ± 0.9

Treatment	Adjusted yields ± s.e. (grams per four rows, adjusted to 12% moisture). N refers to the number of plots on which yields are based
Untreated control	1724 ± 292 N=3
Carbofuran	2474 ± 211 N=3
Dinotefuran pre + 6 d post	2688 ± 226 N=2
Dinotefuran 6 d post low rate	2245 ± 236 N=2
Dinotefuran 6 d post mid rate	2194 ± 24 N=4
Dinotefuran 20 d post low rate	2113 ± 204 N=4
Dinotefuran 20 d post mid rate	2593 ± 184 N=2
Dinotefuran 20 d post high rate	2423 ± 192 N=4

Conclusions: Applications of dinotefuran at several rates and timings reduced densities of weevil larvae on roots to levels below those seen in the control treatment ($P < 0.01$ for overall treatment effects at all sampling dates). The most effective dinotefuran treatment was the split pre-post application (Treatment #3). However, single postflood applications at both 6 d and 20 d after flooding also reduced larval densities. The 20 d postflood application was as effective as the carbofuran application made on the same date. This latter result suggests that postflood applications of dinotefuran have some direct activity against weevil larvae established on rice roots. Yields from dinotefuran-treated plots were significantly higher than from control plots ($P < 0.05$).

Late-Season Test

Location: Rice Research Station, Crowley, LA

Variety/Seeding Rate: Cocodrie/90 lb/A

Plot Size: 4.1 x 18 ft (seven rows per plot at 7-inch row spacing)
.
Planting Method/Date: Drill-seeded/May 26, 2005

Fertilization/Weed Control: Standard practices

Experimental Design: Randomized complete block; five treatments, four replications

Treatments:
1. Untreated control
2. V10170 50WD @ 20 gm ai/A, 1 d preflood + V10170 0.5GR @ 100 gm ai/A, 5 d postflood
3. Dinotefuran 1.0 GR @ 120 gm ai/A, 1 d preflood +14 d postflood (240 g ai/A total)
4. Dinotefuran 1.0 GR @ 120 gm ai/A, 1 d preflood + 21 d postflood (240 g ai/A total)
5. Dinotefuran 1.0 GR @ 360 gm ai/A, 21 d postflood

Insecticide applications made to appropriate plots by hand using a shaker jar on June 21 (preflood, Treatments 2, 3, and 4); June 27 (Treatment 2); July 6 (Treatment 3); and July 13 (Treatments 4 and 5).

Water Management: Permanent flood, June 22 (3- to 4-leaf stage)

Sampling: Core samples/plot: four (1st, 2nd, and 3rd samplings)

Sampling Date: July 12 (20 dpf [days postflood]); July 19 (27 dpf); July 25 (33 dpf)

Data Analysis: A mean number of larvae per core was calculated for each plot at each sampling date based on four core samples at each sampling date. Treatment effects on mean numbers of larvae per core were analyzed by PROC MIXED with treatment as fixed effect, block as random effect.

Results:

Treatment	Larvae per core sample ± s.e. (% control relative to control) on:		
	7/12/05 (20 d post)	7/19/05 (27 d post)	7/25/05 (33 d post)
Untreated control	35.6 ± 5.3	40.3 ± 8.1	26.6 ± 4.0
V10170 pre + 5 d post	1.3 ± 0.4	3.8 ± 0.8	2.5 ± 0.2
Dinotefuran pre + 14 d	3.7 ± 0.5	5.9 ± 1.5	9.8 ± 2.8
Dinotefuran pre + 21 d post	6.7 ± 2.5	7.1 ± 2.5	2.6 ± 0.9
Dinotefuran 21 d post	34.6 ± 2.1	19.9 ± 2.1	4.6 ± 1.1

Conclusions: Pre-post split applications of dinotefuran (and the compound V10170) gave excellent control of weevil larvae under heavy weevil pressure ($P < 0.001$ for overall treatment effect at all sampling dates). A single postflood application of a high rate of dinotefuran made 21 d after flooding controlled weevil larvae at 27 d and 33 d after flooding ($P < 0.05$ for comparisons between control and treated plots), suggesting some larvacidal activity.

SMALL- AND LARGE-PLOT TESTS OF ETOFENPROX

M. Stout and R. Pousson

A granular formulation of Etofenprox, a "pyrethroid-like" insecticide, was tested in two drill-seeded tests in 2005. One was a small-plot experiment and the other a large-plot demonstration. This insecticide is being evaluated as an alternative to liquid formulations of pyrethroids, such as Karate and Mustang Max.

Small-Plot Experiment

Location: Rice Research Station, Crowley, LA

Variety/Seed Rate: Cocodrie/90 lb/A

Plot Size: 4.1 x 18 ft. Each plot was surrounded on all four sides by earthen levees, and each plot had a separate water inlet/outlet pipe. This was done to prevent movement of insecticides among plots.

Planting Method/Date: Drill-seeded/May 22

Emergence: May 30

Fertilization/Weed Control: Standard practices

Experimental Design: Randomized complete block; six treatments, four replications

Treatments:
1. Untreated control
2. Etofenprox 150 g ai/ha, applied 2 d postflood
3. Etofenprox 200 g ai/ha, applied 2 d postflood
4. Etofenprox 250 g ai/ha, applied 2 d postflood
5. Etofenprox 200 g ai/ha, applied 9 d postflood
6. Karate Z 0.03 lb ai/A, foliar spray, applied 2 d postflood (commercial standard)

Etofenprox applications were made by hand using a shaker jar. Rates were calculated on the basis of area of rice plots, not on the basis of total area defined by levees.

Water Management: Permanent flood, June 14 (rice at 3- to 4-leaf stage); drained, Aug 30

Insecticide:

Name: Karate
Method: Foliar spray; backpack CO_2 sprayer
Date: June 16 (2 d postflood)
Rate: 0.03 lb ai/A

Name: Etofenprox 1.5% granular
Method: By hand, shaker jar
Date: June 16 and June 23 (2 d and 9 d postflood)
Rate: variable; see above

Sampling: Cores/plot: three or four core samples per plot

Sampling Date: July 16 (22 dpf [days postflood]); July 11 (27 dpf); July 18 (34 dpf)

Data Analysis: A mean number of larvae per core was calculated for each plot at each sampling date based on three or four core samples at each sampling date. Treatment effects on mean numbers of larvae per core were analyzed by PROC MIXED with treatment as fixed effect, block as random effect.

Results:

Treatment	Larvae per core sample ± s.e. (% control relative to control) on:		
	July 6	July 11	July 18
Untreated control	24.8 ± 2.7	36.1 ± 4.4	41.4 ± 9.9
Etofenprox 150 2d	16.6 ± 2.5 (33%)	22.6 ± 4.2 (37%)	32.3 ± 3.9 (22%)
Etofenprox 200 2d	21.3 ± 5.1 (14%)	31.2 ± 5.7 (14%)	26.0 ± 2.2 (37%)
Etofenprox 250 2d	19.1 ± 1.6 (23%)	23.4 ± 3.3 (35%)	31.7 ± 3.1 (23%)
Etofenprox 200 9d	23.7 ± 4.9 (4%)	32.0 ± 7.2 (11%)	32.6 ± 3.0 (21%)
Karate 2d (standard)	24.6 ± 5.4 (1%)	33.5 ± 1.5 (7%)	34.5 ± 2.4 (17%)

Conclusions: Although there were no significant treatment effects in the ANOVA (July 6 sampling: $F_{5,15} = 0.87$, $P = 0.5$; July 11 sampling: $F_{5,15} = 1.5$, $P = 0.2$; July 18 sampling: $F_{5,15} = 1.2$, $P = 0.4$), applications of etofenprox did appear to reduce densities of weevil larvae. Larval densities were 14 to 37% lower in plots in which etofenprox was applied 2 d after flood. This level of reduction was better than that given by a single application of Karate made 2 d postflood. Applications of etofenprox made 9 d postflood appeared to be less effective than applications made 2 d postflood. Calculating rates of etofenporx based on area of rice plots rather than area defined by levees may have resulted in rates of etofenprox that were lower than intended.

Large-Plot Experiment

Location: Rice Research Station, Crowley, LA

Variety/Seeding Rate: Cocodrie/100 lb/A

Plot Size: Approximately 0.5 acres each

Planting Method/Date: Drill seeded/May 11, 2005

Emergence: May 25

Fertilization/Weed Control: Standard practices

Experimental Design: Randomized complete block; two treatments, two replications

Treatments:

1. Untreated control (UTC)
2. Etofenprox 1.5% granules applied 2 d postflood

Note on application: Insecticide was applied using a fertilizer spreader on June 16 to appropriate plots. The spreader was improperly calibrated. Product was applied to (approximately) the eastern 2/3 of each plot but not the western-most 1/3 of each plot. Thus, the eastern 2/3 of the two treated fields was treated with a rate of ca. 300 g ai/ha, the western 1/3 of each treated plot was not treated.

Water Management: Permanent flood, June 14 (rice at 3- to 4-leaf stage)

Sampling: Three N-S transects were established in each plot for core samples. The eastern and middle transects of treated plots were transects to which etofenprox had been applied (see "Note on application" above), whereas etofenprox had not been directly applied to rice in western-most transect (water movement from treated areas was allowed). Five cores taken per transect on July 6 (22 d postflood), July 13 (29 dpf), and July 20 (36 dpf). Fifteen total cores were taken per plot.

Data Analysis: A mean number of larvae per core was calculated for each plot based on the 15 core samples taken per plot on each sampling date. Also, a total mean number of larvae per core was calculated for each plot by summing means from the three sampling dates. These mean values were used for the statistical analysis. Treatment effects on number of larvae per core were analyzed by PROC MIXED with treatment as a fixed effect, plot as random effect.

Results:

Treatment	Larvae per core sample ± s.e. (% control relative to control) on:		
	July 6	July 13	July 20
Untreated plots	18.8 ± 3.1	24.9 ± 2.6	26.3 ± 0.6
Treated plots	10.7 ± 1.0 (43%)	16.3 ± 2.8 (35%)	18.1 ± 0.1 (31%)

Conclusions: Applications of etofenprox made 2 d postflood provided 31 to 43% control of weevil larvae under high pressure. Weevil densities were significantly lower in the treated plots on July 13 (P = 0.02) and July 20 (P = 0.04) but not on July 6 (P = 0.2). Total weevil densities did not significantly differ between the two treatments (P = 0.1). In treated plots, control was much better in areas in which etofenprox had been directly applied than in areas in which etofenprox had not been directly applied (data not shown).

FERTILIZER IMPREGNATION: EARLY- AND LATE-SEASON TESTS

M. Stout and R. Pousson

One of the problems associated with the use of pyrethroid insecticides for control of the rice water weevil is non-target toxicity resulting from drift of foliar applications of liquid formulations into crawfish ponds. In an effort to address this issue, small-plot tests of the efficacy of pyrethroids impregnated (coated) on fertilizer (urea) were conducted.

Early-Season Test

Location: Rice Research Station, Crowley, LA

Variety/Seeding Rate: Cocodrie/90 lb/A

Plot Size: 4.1 x 18 ft

Planting Method/Date: Drill-seeded/Apr 5, 2005

Fertilization/Weed Control: Standard practices

Experimental Design: Randomized complete block; six treatments, four replications

Treatments:

1. Untreated control
2. Karate 0.04 lb ai/A, 1 d preflood
3. Karate 0.04 lb ai/A, 2 d postflood
4. Karate 0.04 lb ai/A, 6 d postflood
5. Karate 0.04 lb ai/A, 20 d postflood
6. Mustang Max 0.025 lb ai/A, 2 d postflood

Pyrethroids were coated on fertilizer by pipetting appropriate amounts of insecticide suspended in a small volume of water (carrier) on approximately 80 g of urea and mixing the fertilizer and insecticide in a plastic closeable storage bag. Coated fertilizer was allowed to dry for approximately 3 hours before application to plots. Insecticide applications were made by hand by distributing fertilizer granules evenly in plots.

Water Management: Permanent flood, May 4 (rice at 3- to 4-leaf stage); drained, July 26

Sampling: Cores/plot: three or four core samples per plot

Sampling Dates: May 26 (22 dpf [days postflood]); June 2 (29 dpf); June 8 (35 dpf)

Harvest: Aug 4, using a Kubota 3000 combine

Data Analysis: A mean number of larvae per core was calculated for each plot based on three or four core samples at each sampling date. Yields in grams from interior four rows of each plot were adjusted to 12% moisture. Accurate yields were not available from some plots because of a planter malfunction that resulted in missing rows. Treatment effects on numbers of larvae per core and adjusted yields were analyzed by PROC MIXED with treatment as fixed effect, block as random effect.

Results:

Treatment	Larvae per core sample ± s.e. (% control relative to control) on:		
	May 26 (22 dpf)	June 2 (29 dpf)	June 8 (35 dpf)
Untreated control	9.2 ± 1.1	18.1 ± 2.3	19.6 ± 2.4
Karate preflood	2.1 ± 0.4	2.7 ± 0.4	5.9 ± 0.6
Karate 2 d postflood	3.1 ± 0.4	4.8 ± 1.4	8.8 ± 1.3
Karate 6 d postflood	3.9 ± 0.3	8.2 ± 1.3	7.9 ± 1.4
Karate 20 d postflood	5.8 ± 1.0	8.2 ± 0.3	12.8 ± 2.3
Mustang Max 2 d postflood	2.3 ± 1.0	6.4 ± 1.0	6.8 ± 1.4

Treatment	Adjusted yields ± s.e. (grams per four rows, adjusted to 12% moisture)
Untreated control	2346.4 ± 82.8
Karate preflood	2609.3 ± 142.0
Karate 2 d postflood	2390.5 ± 52.0
Karate 6 d postflood	2518.4 ± 62.9
Karate 20 d postflood	2448.6 ± 126.8
Mustang Max 2 d postflood	2498.7 ± 172.2

Conclusions: All fertilizer impregnation treatments significantly ($P < 0.05$) reduced densities of weevil larvae 22, 29, and 35 d after flooding. Preflood and early postflood applications of pyrethroid coated on fertilizer provided greater control of weevil larvae than late postflood (20 dpf) applications. Insecticide applied 20 d after flooding may not have killed larvae established on rice roots (i.e., the fertilizer impregnation was probably reducing larval densities primarily by killing adult weevils, as do foliar applications of liquid pyrethroids). Overall, densities of weevil larvae in control plots in this experiment were lower than in an adjacent test planted and flooded at the same time (data not shown), suggesting that some insecticide was moving from treated plots to control plots.

Late-Season Test

Location: Rice Research Station, Crowley, LA

Variety/Seeding Rate: Cocodrie/90 lb/A

Plot Size: 4.1 x 18 ft

Planting Method/Date: Drill-seeded/May 26, 2005

Fertilization/Weed Control: Standard practices

Experimental Design: Randomized complete block; six treatments, four replications:

1. Untreated control
2. Karate granular formulation, 0.03 lb ai/A, 1 d postflood
3. Mustang EW formulation, impregnated on fertilizer, 0.05 lb ai/A, 1 d postflood
4. Mustang EW formulation, impregnated on fertilizer, 0.05 lb ai/A, 14 d postflood
5. Mustang EW formulation, impregnated on fertilizer, 0.05 lb ai/A, 21 d postflood
6. Karate CS, impregnated on fertilizer, 0.03 lb ai/A, 1 d postflood

For details on insecticide preparation/application, see above.

Water Management: Permanent flood, June 22 (rice at 3- to 4-leaf stage)

Sampling: Cores/plot: four core samples per plot

Sampling Dates: July 14 (22 dpf [days postflood]), July 21 (29 dpf), July 26 (34 dpf)

Data Analysis: A mean number of larvae per core was calculated for each plot based on four core samples at each sampling date. Treatment effects on numbers of larvae per core were analyzed by PROC MIXED with treatment as fixed effect, block as random effect.

Results:

Treatment	Larvae per core sample ± s.e. (% control relative to control) on:		
	July 14 (22 dpf)	July 21 (29 dpf)	July 26 (34 dpf)
Untreated control	36.4 ± 7.6	42.4 ± 3.3	40.3 ± 8.5
Karate granular 1 dpf	26.4 ± 2.7	42.8 ± 7.3	23.6 ± 0.6
Mustang impregnated 1 dpf	32.4 ± 4.6	44.0 ± 3.9	34.3 ± 4.7
Mustang impregnated 14 dpf	40.2 ± 6.7	54.5 ± 10.0	30.6 ± 4.1
Mustang impregnated 21 dpf	37.9 ± 8.1	37.8 ± 3.9	30.9 ± 4.7
Karate impregnated 1 dpf	26.9 ± 5.7	42.8 ± 7.3	23.6 ± 0.6

Conclusions: Fertilizer impregnations and the granular formulation of Karate failed to control weevil larvae, perhaps because of extremely high populations of weevil adults arising from the late planting date.

COMPARISON OF SEED TREATMENTS: DRILL- AND WATER-SEEDED TESTS

J. Hamm, M. Stout, and R. Pousson

Several seed treatments were evaluated as replacements for Icon against the rice water weevil in a drill-seeded test. One of the insecticides was then evaluated in a water-seeded test.

Drill-Seeded Experiment

Location: Rice Research Station, Crowley, LA

Variety/Seeding Rate: Cocodrie/90 lb/A

Plot Size: 4.1 x 18 ft

Planting Method/Date: Drill-seeded/Apr 28, 2005

Emergence: May 5

Fertilization/Weed Control: Standard practices

Experimental Design: Randomized complete block, six treatments, four replicates

Treatments:

1. Untreated control
2. A14006 50 g/100 kg seed
3. A14006 100 g/100 kg seed
4. Cruiser 80 g/100 kg seed
5. Icon 42 g/100 kg seed
6. Karate Z 34 g/ha

All seed was supplied, pre-treated, by Syngenta.

Water Management: Flushed, May 4 and 19; permanent flood, May 24; drain, Aug 11

Sampling: Cores/plot: three or four core samples per plot

Sampling Date: June 15 (22 dpf [days postflood]), June 22 (27 dpf), June 28 (33 dpf)

Harvested: Aug 31, with a Kubota 1300 combine

Data Analysis: A mean number of larvae per core was calculated for each plot at each sampling date based on three or four core samples at each sampling date. Treatment effects on mean numbers of larvae per core were analyzed by PROC MIXED with treatment as fixed effect, block as random effect.

Results:

Treatment	Larvae per core sample ± s.e. (% control relative to control) on:		
	June 15	June 22	June 28
Untreated control	30.25 ± 3.90	38.19 ± 6.94	28.42 ± 6.70
A14006 50 g/100 kg seed	13.19 ± 1.78 (56%)	13.43 ± 3.24 (65%)	8.25 ± 0.94 (71%)
A14006 100 g/100 kg seed	12.56 ± 2.23 (58%)	12.44 ± 2.43 (67%)	10.17 ± .99 (64%)
Cruiser 80 g/100 kg seed	22.19 ± 4.51 (27%)	29.44 ± 3.58 (23%)	28.83 ± 3.13 (-0.01%)
Icon 42 g/100 kg seed	18.44 ± 2.21 (39%)	25.44 ± 1.39 (33%)	19.50 ± 2.33 (31%)
Karate 34 g/ha	35.81 ± 2.63 (-18%)	31.63 ± 4.46 (17%)	30.17 ± 5.26 (-0.06%)

Treatment	Adjusted yields ± s.e. (grams per four rows, adjusted to 12% moisture)
Untreated control	2006.7 ± 361.2
A14006 50 g/100 kg seed	3170.7 ± 170.8
A14006 100 g/100 kg seed	2970.55 ± 160.5
Cruiser 80 g/100 kg seed	2846.8 ± 191.59
Icon 42 g/100 kg seed	3031.0 ± 225.8
Karate 34 g/ha	2256.6 ± 167.6

Conclusions: Core samples taken on June 15 showed that both rates of A14006 significantly reduced larval densities compared with the control (50 g/100 kg: P = .0025; 100 g/100 kg: P = .0034). In the second core sampling (June 22), larval densities in A14006-treated plots were also significantly lower compared with control plots (50 g/100 kg: P = .0042; 100 g/100 kg: P = .0030). Data from the third cores showed that A14006, in addition to significantly reducing larvae compared with control (50 g/100 kg: P = .0154; 100 g/100 kg: P = .0310), significantly outperformed Cruiser (50 g/100 kg: P = .0132; 100 g/100 kg: P = .0266). Karate as a seed treatment failed to control weevil larvae on any sampling date. Larval densities in A14006-treated plots were consistently lower than densities in Icon-treated plots, although differences were not significant. Yields from the plots treated with Icon and with the low rate of A14006 were significantly higher than yields from control plots.

Water-Seeded Experiment

Location: Rice Research Station, Crowley, LA

Variety/Seeding Rate: Cocodrie/150 lb/A

Plot Size: 5 x 20 ft

Planting Method/Date: Water-Seeded, June 24

Emergence: June 28

Fertilization/Weed Control: Standard practices

Experimental Design: Two treatments, four reps, completely randomized design

Treatments:

1. Untreated control
2. A14006, 100 g ai/100 kg seed

Seeds soaked in water to germinate for 24 hours, removed from soak water for 24 hours, treated with insecticide, allowed to dry for 3 to 4 hours, then sown by hand into plots

Water Management: Flushed, July 1; permanent flood, July 19; drained, Oct 3

Sampling: Cores/Plot: Four cores samples per plot at each sampling date

Sampling Date: Aug 3 and 8

Results:

Treatment	No. of larvae per core sample ± s.e. on:	
	Aug 3	Aug 8
Untreated control	31.1 ± 4.7	28.5 ± 7.8
A14006 100 g/100 kg seed	6.8 ± 1.3 (78%)	11.4 ± 1.4 (60%)

Differences between treatments were significant ($P < 0.05$) only on the Aug 3 sampling date. A14006 applied to pre-germinated seed and then seeded into flooded plots provided adequate control of rice water weevil 5 weeks after treatment of seeds.

COASTAL EROSION CONTROL RESEARCH

DEVELOPMENT OF SEED-BASED *Spartina alterniflora* (SMOOTH CORDGRASS) PROPAGATION TECHNOLOGY FOR COASTAL WETLANDS RESTORATION

H.S. Utomo, I. Wenefrida, M.D. Materne, S.A. Harrison, and S.D. Linscombe

Background

Coastal erosion and wetland deterioration are serious and widespread problems affecting all regions of the United States. The highest rate of coastal marshland losses occurs in Louisiana at an estimated rate of 16,000 to 20,000 acres a year attributed to various biotic and abiotic factors, including subsidence, sea level rise, hydrologic modification, and herbivory. Increasing marsh elevation with the introduction of new sediments has been used to mitigate much of these losses. Sediment enhancement techniques, such as beneficial-use dredge sediments, for large scale marsh creation are improving, resulting in a significantly large acreage of wetland restoration. It is critical, therefore, to develop rapid and successful vegetative restoration technology to stabilize and maximize the beneficial use of sediments for large-scale restoration projects in coastal Louisiana. A seed-based *S. alterniflora* propagation method can expedite the establishment of vegetation over a large area quickly and economically. Hundreds of acres can be planted by air in a day at a fraction of the cost of current planting practices. Developing a source of seeds for large-scale planting becomes crucial. A large source of seeds can be produced under cultural management similar to an agricultural crop production system that can be maintained every year to provide a steady supply of *S. alterniflora* seeds. The size of the operation can easily be adjusted to meet the demand.

Louisiana *S. alterniflora* has a poor seed set. A seed set ranging from 3 to 20% has been reported among *S. alterniflora* samples from San Francisco. The seed set was highly variable from one year to another. The seed set of Louisiana genotypes appears to be lower than reported. One of initial goals was to improve the germination rate and seed set. Through cycles of selection, LSU AgCenter scientists were able to select 13 high seed producers with an average seed set of 52% (maximum of 83%) and average germination rate of 60% (maximum of 96%). These 13 superior seed-producing lines are being used as parental lines to develop seed-based propagation technology for coastal wetlands restoration. The use of tested materials will improve the success rate in coastal erosion control and habitat restoration.

Objectives

This mutli-year research project is funded by Louisiana Sea Grant Office and the USDA CSREES. The overall goals are to (1) establish foundation seed protocols and source material for each superior *S. alterniflora* parental line used in synthetic (blend) variety, (2) establish protocols and guidelines for commercial production of *S. alterniflora* seed of superior genetic background, (3) provide technical guidelines on commercial seed products, (4) provide technical guidelines for seed-based planting for erosion control and habitat restoration, and (5) provide Web-based information on the use of superior *S. alterniflora* released plant materials.

Status

This project was initiated last year and research activities conducted include:

Establishing foundation plots of parental lines. Foundation plots for 13 elite lines have been established in isolated plots at the Rice Research Station, Crowley, LA. The foundation plots will serve as the source of original parental materials. The purity of each plot was determined using DNA markers. Each line was maintained in an isolated 0.25-acre plot. Plugs from each parental line were transplanted in the field using 8- x 8-ft spacings. The field was maintained in a flooded condition with occasional drainage for weed control and plot maintenance. Additionally, herbicides such as RoundUp and Basagran were used to control weeds. These foundation plots were maintained at a vegetative stage with un-open flowers being removed prior to flowering (starting in July). These foundation plots will serve as the source of parental lines to produce synthetic (blend) varieties.

Development of DNA markers for regulatory purposes. Unique DNA markers associated with each elite line were developed for regulatory purposes. PCR-based DNA markers provide an inexpensive, rapid, and reliable method to identify each parental line. Genomic DNA from each line was extracted from young leaf tissue weighing approximately 0.2 g. The DNA was isolated using the DNeasy kit (QIAGEN, Cat. No. 69104). We have identified 28 potential AFLP markers from a total of 712 polymorphic markers that can be used to separate parental lines from each other and from an original collection of 126 *S. alterniflora* accessions. One to three bands were found to be only amplified in a single line; therefore, these bands can be used for identification purposes. These AFLP markers were converted into sequence-characterized amplified region (SCAR) markers. The bands were excised and sequenced. The SCAR marker sequences were designed by identifying a 20- to 30-bp sequence. Each pair of SCAR primers for one line was tested against other parental lines and all accessions in the *S. alterniflora* collection. Testing was also conducted to determine optimal annealing temperature and its consistency in producing exact molecular weight.

Production of synthetic (blend) seeds. Hybridization blocks have been established at the Rice Research Station, Crowley, LA. Thirteen elite lines were used as parental lines to produce synthetic (blend) cultivars. They were planted randomly in 4- x 4-ft spacings to allow natural random pollination to produce blend/synthetic seeds. All important aspects of cultural and management practices, including fertilization, disease management, and weed control, were studied. Important growth parameters, such as seedling survival, seedling vigor, spread, % coverage, plant height, heading date, and seed production, were assessed. Additional data will be collected in the next growing season. Research also will be conducted to determine optimum harvest timing. *S. alterniflora* seeds do not all reach maturity at the same time. Daily physiological and morphological observation will be conducted 3 weeks prior to 50% seed maturity to determining the correct harvest time to obtain optimum seed production. Results will be used to develop protocols for harvest and post-harvest handling.

Seed harvest, storage, and germination. Seed were harvested manually on October 15, 2005. Harvested seed were stored and chilled at 5°C in closed plastic bags at 100% humidity for 3 months. At the end of this period, germination rates were determined. Four hundred randomly chosen seeds were placed on germination papers moistened with water containing fungicide, placed in disposable Petri dishes, and maintained in a culture room at 25°C with 16:8 h day/night cycle. A germination rate was determined after 14 days. Currently a series of germination tests is being conducted. Following stratification, the seed sample will be subjected to storage temperatures of 5, 10, 15, and 20°C in three replications for a 6-month period. Germination rates will be determined every 2 weeks during the treatment period. Data collected will be used to develop a protocol for storing seeds.

FIELD EVALUATION OF CALIFORNIA BULRUSH[1]

H.S. Utomo, I. Wenefrida, and J.L. Nash

California bulrush (*Schoenoplectus californicus*) is a deep-water plant species that can tolerate water depth of more than 3 feet. Native to marshes, swamps, seeps, washes, and floodplains, along lake and stream margins, and in wet meadows, *S. californicus* effectively traps sediment and serves as a buffer to dissipate wave energy, thus enhancing the establishment of other vegetation along the shorelines. It can provide both short- and long-term vegetation. *S. californicus* can facilitate removal of some toxic metals, such as Cu, Pb, Zn, and Me, from soil matrix. It improves water quality in wetland construction and re-conversion of degraded wetlands. In addition, it provides a favorable habitat for wildlife including some endangered species.

Field tests were conducted at the Rice Research Station to evaluate the performance of 45 *S. californicus* entries collected by USDA NRCS from its geographical range of Louisiana's marshes. Data collected will be used to select lines for multi-location trials. Currently, no cultivar has been released in Louisiana. 'Restorer' is the only known cultivar of *S. californicus* released in 1993 by the Natural Resources Conservation Service - Georgia Plant Materials Program primarily for use as a wastewater treatment plant species. The release of *S. californicus* for Louisiana marshes will provide restoration agencies with plant materials that are more productive and have better adaptation and, therefore, will improve the success rate in erosion control and marsh habitat restoration.

Objective:	To select promising lines to be advanced into multi-location performance trials.
Plant material:	45 *S. californicus* entries collected in a wide range marsh region were used in this study.
Experimental design:	Randomized complete block design with three replications
Planting Method:	Hand transplanting of plants from 1-gal pots
Planting Space:	15 x 15 ft
Planting Date:	February 17, 2004
Fertilization:	80 lb N/A
Parameters:	Plant height [measured from ground level to the uppermost tip (cm)] Stem density (number of tillers or stems per m^2) Stem diameter (measured at 5 cm above water line in mm) Spread (measured as an area covered by the plant (m^2), 11 months after planting) Rate of spread (average weekly spread [m^2/week] from 12 to 15 months after planting)

[1] This research is supported in part by grants from Coastal Restoration and Enhancement through Science and Technology (CREST) and the USDA CSREES.

Table 1. Comparative performance of 45 California bulrush (*Schoenoplectus californicus*) genotypes and *cv* 'Restorer' under freshwater conditions, Rice Research Station, Crowley, LA, in 2004-2005.

Accession	Height (cm)	Stem Density (tillers/m^2)	Stem Diameter (mm)	Spread (m^2)	Rate of Spread (m^2/week)
68268	182.8 a-f	89.6 d-l	13.1b-i	7.5240 a	0.2554 a
68371	177.2 b-g	102.7 b-k	12.2f-k	6.8675 ab	0.2390 ab
68275	190.6 ab	104.5 b-j	12.5 d-k	6.6762 a-c	0.3180 a-c
68284	184.8 a-f	89.7 d-l	13.0 b-i	6.6014 a-c	0.2300 a-c
68279	172.4 d-i	104.3 b-j	13.6 b-i	6.5906 a-c	0.2261 a-c
68309	176.8 b-h	128.8 a-d	12.7 c-j	6.6746 a-c	0.2246 a-d
68293	178.3 b-g	117.2 b-g	14.7 a-f	6.1876 a-e	0.2127 a-e
68329	141.3 j	134.8 a-c	8.7 l	6.2642 a-e	0.2120 a-e
68310	187.8 a-c	80.5 e-m	14.5 a-g	5.9798 a-f	0.2103 a-f
68270	181.1 a-f	111.0 b-i	11.7 h-k	5.9651 a-f	0.2060 a-f
68312	183.9 a-f	104.2 b-j	14.4 b-g	5.8654 a-g	0.2057 a-f
68301	180.7 a-f	140.5 ab	11.6 h-k	5.3817 a-h	0.1848 a-g
68281	177.5 b-g	163.7 a	11.1 i-k	5.4410 a-h	0.1823 a-g
Restorer	164.7 g-i	129.0 a-d	12.4 e-k	5.1756 a-h	0.1767 a-g
68335	166.0 g-i	97.5 b-l	12.1 g-k	4.9488 a-i	0.1748 a-g
68272	165.5 g-i	92.5 c-l	13.1 b-i	5.0768 a-i	0.1733 a-h
68323	186.7 a-d	102.0 b-k	13.1 b-i	4.5813 a-i	0.1659 a-h
68295	181.2 a-f	85.5 d-m	14.1 b-h	4.7305 a-i	0.1655 a-h
68283	180.6 a-f	112.3 b-h	12.1 g-k	4.7410 a-i	0.1612 a-h
68269	165.3 g-i	117.5 b-f	12.4 e-k	4.5774 a-i	0.1610 a-h
68326	177.9 b-g	125.0 a-e	12.5 d-k	4.5044 a-i	0.1604 a-h
68265	177.7 b-g	96.2 b-l	16.9 a	4.7117 a-i	0.1547 a-h
68294	178.7 b-g	80.0 e-m	13.6 b-i	4.4879 a-i	0.1532 a-h
68267	171.7 e-i	77.8 f-m	12.7 c-j	4.6766 a-i	0.1523 a-h
68325	181.5 a-f	110.0 b-i	13.5 b-i	4.2708 b-i	0.1499 a-h
68324	171.2 e-i	78.3 f-m	12.6 d-k	4.1991 b-i	0.1498 a-h
68334	160.4 i	92.5 c-l	10.4 j-l	4.1838 b-i	0.1443 b-h
68274	162.9 hi	61.7 j-m	14.6 a-g	3.8620 b-i	0.1408 b-h
68333	174.2 c-i	71.7 f-m	15.3 a-c	3.9523 b-i	0.1394 b-h
68273	178.9 a-g	82.7 e-m	15.1 a-d	3.9885 b-i	0.1371 b-h
68370	185.4 a-e	53.3 lm	14.2 b-h	3.9388 b-i	0.1350 b-h
68276	175.7 c-h	81.2 e-m	12.4 e-k	3.9900 b-i	0.1348 b-h
68277	176.7 b-h	94.7 c-l	11.6 h-k	3.8713 b-i	0.1348 b-h
68313	181.7 a-f	86.7 d-m	13.8 b-h	3.7041 c-i	0.1277 c-h
68278	192.9 a	78.8 f-m	15.5 ab	3.6962 c-i	0.1269 c-h
68287	175.7 c-h	85.0 d-m	14.6 a-g	3.5601 c-i	0.1249 c-h
68271	170.7 f-i	80.2 e-m	14.8 a-e	3.3923 d-i	0.1177 d-h
68282	180.5 a-f	71.2 g-m	14.7 a-g	3.2444 d-i	0.1138 e-h
68336	172.3 e-i	63.8 j-m	13.5 b-i	3.2383 d-i	0.1119 e-h
68298	171.4 e-i	65.2 i-m	14.6 a-g	3.1219 d-i	0.1082 e-h
68330	171.7 e-i	76.5 f-m	10.1 kl	3.0525 e-i	0.1057 e-h
68299	176.0 c-h	70.3 h-m	12.2 f-k	2.9119 f-i	0.1028 f-h
68337	184.2 a-f	82.2 e-m	12.8 c-j	2.8014 g-i	0.0966 gh
68327	185.0 a-f	57.5 k-m	13.2 b-i	2.6540 hi	0.0931 gh
68280	171.3 e-i	41.7 m	12.9 c-j	2.5388 hi	0.0895 gh
68328	181.2 a-f	66.0 i-m	11.9 h-k	1.8978 i	0.0664 h
Mean	176.3	92.13	13.1	4.5610	0.1577.5
CV (%)	5.52	34.43	13.6	47.30	47.16
LSD (0.05)	11.2	37.51	2.05	29492	0.1029.8

Means with the same letter(s) do not significantly differ at 5% level (Duncan's multiple range test).

LOUISIANA RICE RESEARCH VERIFICATION PROGRAM, 2005

J.K. Saichuk and J.P. Hebert

Introduction

Rice is the third most economically important crop in Louisiana, following closely behind sugarcane. Forestry contributes more than all other crops. However, rice production in Louisiana continues to lag behind our neighboring states in production per acre. Recent price declines associated with a weak export market have placed a great deal of stress on the industry.

Improved varieties have contributed heavily to the survival of the industry but cannot shoulder the entire load of making the business of rice production profitable. The Louisiana Rice Research Verification Program (LRRVP) has been funded since 1998. In 2005, 12 verification fields located in Acadia, Allen, Avoyelles, Calcasieu, Concordia, East Carroll, Evangeline, Jefferson Davis, Natchitoches, St. Landry, and Vermilion parishes were in the program.

Objectives

The objectives of the LRRVP are to:

1. Demonstrate the most cost efficient production of rice.
2. Increase confidence of rice growers in extension and research recommendations.
3. Increase confidence of county agents and specialists in our recommendations.
4. Educate county agents and growers in all aspects of rice production.
5. Develop an economic data base for rice production.

Results

The 12 grower fields in the LRRVP in 2005 represented 538.7 acres (Table 1). This is the first year since the inception of the program that there was no ratoon crop production in any verification field. In two parishes, ratoon crops were planned; one was lost to Hurricane Rita and the other lost to rutting at harvest. The field damaged by Hurricane Rita had produced the highest first crop yield ever produced in the program, 8282 lb/A, and also had tremendous second crop potential. Yield of the verification program fields averaged 6600 lb/A in comparison with the average of the parishes participating in the program (6074 lb/A) and well above the state average of 6104 lb/A, the second highest state average.

Two of the verification fields were planted to CL161, which does not yield comparably with most of the other recommended varieties (Table 2). Previously, only recommended varieties could be used in the program. In 2005, an exception was made to allow one grower to plant the hybrid XP723 for two reasons. First, hybrids are not currently recommended because the Rice Research Station has not been able to collect 3 years of data on any one variety and second, to gain experience with production of hybrids.

Flow meters have been used for the past 3 years on as many verification fields as possible. Using these meters has helped to measure water use and estimate water costs. In 2002, it cost about $1.00/A-inch or $23.00/A as compared with $2.00 and $50.00, respectively, in 2005. If diesel fuel prices reach $2.20 a gallon in 2006, costs could escalate to $2.50 and $60.00, respectively.

While it is not the intent of the program to identify all problems facing the rice industry, it has become obvious some of the key problems confronting Louisiana rice farmers, especially in south Louisiana, are land rent and water costs.

Table 1. 2005 Louisiana Rice Research Verification Program Yield Summary.

Parish	Acres in Verification Program	Verification Yield/A @ 12% Moisture		Verification Program			Average Parish Yield[1]	Parish Acreage	Total Parish Production
		1st Crop Alone	Second Crop	Total Yield/A	1st Crop Production	Total Production			
Acadia	28.9	6427	0	6427	185,740.3	185,740.3	6600	82,563	544,915,800.0
Allen	76.7	4140	0	4140	317,538.0	317,538.0	5508	17,890	98,538,120.0
Avoyelles	32.1	5819	0	5819	186,789.9	186,789.9	6318	14,806	93,544,308.0
Calcasieu	49.0	8282	0	8282	405,818.0	405,818.0	5913	15,840	93,661,920.0
Concordia	60.5	7003	0	7003	423,681.5	423,681.5	5625	14,726	82,833,750.0
East Carroll	30.4	7771	0	7771	236,238.4	236,238.4	7002	15,831	110,848,662.0
Evangeline	30.0	6014	0	6014	180,420.0	180,420.0	6318	48,223	304,672,914.0
Jeff Davis	39.2	5264	0	5264	206,348.8	206,348.8	5832	82,440	480,790,080.0
Natchitoches	30.0	7022	0	7022	210,660.0	210,660.0	6750	3,060	20,655,000.0
Richland	47.4	7974	0	7974	377,967.6	377,967.6	6525	5,921	38,634,525.0
St. Landry	61.7	7686	0	7686	474,226.2	474,226.2	5994	25,098	150,437,412.0
Vermilion	52.8	6631	0	6631	350,116.8	350,116.8	5589	76,361	426,781,629.0
	538.7				3,555,545.5	3,555,545.5		402,759	2,446,314,120.0
Average yield (lb/A)					6600	6600			6074

[1] Estimated, Includes 2nd crop, and adjusted to 12% moisture.
*No second crop harvested in the verification program in 2005.

Table 2. 2005 Louisiana Rice Research Verification Program Yield, Milling, and Economic Summary.

Parish	Variety	Yield @ 12% Moisture (cwt/A)[1]	Milling (% Whole / % Total)	Variable Costs ($/A)[2]	Cost of Production ($/cwt)[2]	Return on Variable Costs ($/A)[2,3]
Acadia	Cocodrie	64.27	63.4 / 72.3	282.53	4.40	170.57
Allen	CL161	41.40	53.3 / 67.8	283.07	6.84	8.80
Avoyelles	Cheniere	58.19	58.9 / 72.0	231.92	3.99	178.32
Calcasieu	XP723	82.82	61.3 / 72.2	365.92	4.42	217.96
Concordia	Cheniere	70.03	63.3 / 71.2	283.02	4.04	210.69
East Carroll	Cheniere	77.71	58.9 / 71.2	251.75	3.24	296.11
Evangeline	Cocodrie	60.14	62.5 / 71.2	239.85	3.99	184.14
Jeff Davis	CL161	52.64	61.6 / 69.2	284.36	5.40	86.75
Natchitoches	Cocodrie	70.22	61.2 / 70.7	313.24	4.46	181.81
Richland	Cheniere	79.74	64.8 / 72.7	261.89	3.28	300.28
St. Landry	Cheniere	76.88	63.1 / 70.2	242.74	3.16	299.26
Vermilion	Cheniere	66.31	62.3 / 71.2	260.15	3.92	207.34

1. Includes ratoon crop yield of cwt/A (No ratoon crop harvested in the verification program in 2005).
2. Costs captured are from land preparation to getting the crop to the truck. They do not include land rent, transporting, drying, storing, or fixed costs.
3. This value was obtained using a selling price of $7.05/cwt.

RICE WEED CONTROL[1]

INTRODUCTION

E.P. Webster, W. Zhang, R.M. Griffin, S.L. Bottoms, and J.B. Hensley

Introduction and Justification

Weed control studies were conducted at the Rice Research Station and producer fields in south Louisiana in 2005. A total of 65 studies were established with a total of 2700 research plots. These studies indicate that weed control in rice will continue to be more effective as the new technologies and new herbicides become available to the producers. Many of these studies have been conducted over 2 to 3 years and have been completed. However, several of these studies have 1 year of data and need to be repeated in order to verify the results over time. This project continues to work on different application methods for products in drill- and water-seeded rice, and it continues to supply data for herbicide development and to aid in the expansion of current herbicide labels.

Herbicide Combinations for Weed Control in Clearfield Rice

This project has conducted over 100 field, greenhouse, and laboratory trials on the Clearfield rice production system. This project has focused on application timing and rate of Newpath, Clearpath (pre-package of Newpath plus Facet), and Beyond to best control red rice and other weeds present in rice fields. Over the past few years, several herbicide mixtures have been evaluated to improve broadleaf weed control in a Clearfield rice production system. Two of the most troublesome broadleaf weeds in our research area are Indian jointvetch and hemp sesbania. Newpath or Beyond applied alone control these weeds 0 to 50%, depending on the size at application. Several herbicides applied in combination with Newpath or Beyond can increase the control of these weeds to 85 to 95%. The additions of Aim, Facet, Permit, Regiment, or Stam are all viable options for mixing with Newpath or Beyond. Aim can provide control of these weeds at reduced rates at an economical price. The new herbicide Clearpath can also be used in place of an application of Newpath to control these problem weeds. These herbicides must be applied when Indian jointvetch and hemp sesbania are less than 6 inches in height.

Herbicides with Residual Activity for Use in Clearfield Rice

Newpath plus Command, Clearpath, Facet, or Prowl H_2O were evaluated for potential fit in Clearfield rice. Each of these combinations can be used to provide weed management and control of weeds in Clearfield rice. The use of Command PRE followed by two applications of Newpath postemergence allows for increased control of sprangletop and some broadleaf weeds, such as ducksalad. However, hemp sesbania and Indian jointvetch can become a problem when Command is used in a Clearfield system. Clearpath is an excellent herbicide that can be used as the first or second postemergence application to provide control of red rice, hemp sesbania, and Indian jointvetch. However, late-season emergence of sprangletop can be a problem with the use of this herbicide. The use of Facet will provide similar results when compared with Clearpath. Prowl H_2O may be an excellent choice as a mixture herbicide with Newpath. This herbicide can be used as a DPRE or as a partner in the first or second postemergence Newpath application in drill-seeded rice. However, rice must be in the 4-leaf stage before Prowl H_2O can be used in a water-seeded system, and this is too late to obtain adequate control with this herbicide. These herbicides provide producers with viable options for use in rice weed management in a Clearfield production system, but it is important to know and understand the weed spectrum present in a given field before a herbicide program is selected.

[1] This research is supported in part by funding provided by rice producers through the Louisiana Rice Research Board.

Clincher and Ricestar HT Grass Weed Control

A study was established this year to evaluate Ricestar HT alone and in combination with Whip 360 applied at the 2- to 3-leaf, 3- to 4-leaf, 4- to 5-leaf, and postflood application timings compared with Clincher at 15 oz/A applied at the same timings in drill-seeded rice. Ricestar HT at 22 and 24 oz/A controlled barnyardgrass, broadleaf signalgrass, and Amazon sprangletop similar to Clincher applied at 15 oz/A. The addition of Whip at 3 to 7 oz/A can also increase control of sprangletop when mixed with Ricestar HT at 10 to 14 oz/A. Regardless of the grass herbicide selected, it is necessary for these products to be applied to weeds that are under saturated conditions in order to provide acceptable control.

Grasp use in Drill- and Water-Seeded Rice

Several studies were established to evaluate the weed control spectrum of Grasp and the tolerance of rice cultivars to Grasp. In the rice cultivar tolerance trial, a reduction in root mass was observed for all cultivars evaluated compared with a nontreated of the same cultivar. Jupiter, a medium-grain cultivar, and Pirogue, a short-grain cultivar, had a reduction in root mass of over 50% compared with the nontreated within a cultivar at 12 days after treatment. At 24 days after treatment, the observed root reduction was less than 20% compared with the nontreated cultivars. The early-season injury did not translate into a yield reduction. Weed control with Grasp was inconsistent on alligatorweed, ducksalad, hemp sesbania, and jointvetch. Grasp did provide excellent control of creeping rivergrass (perennial barnyardgrass) and large barnyardgrass with greater than three to four tillers. Grasp does provide some residual activity; however, the spectrum of control changes when applied PRE.

Perennial Grass Management in Rice

Several studies were established to evaluate herbicide programs for the management of brook paspalum, knotgrass, water paspalum, and creeping rivergrass. Herbicide treatments included Command applied PRE followed by two postemergence applications of Clincher (10 fb 15 oz/A), Ricestar HT (13 fb 17 oz/A), Newpath (4 fb 4 oz/A), and Regiment (0.4 fb 0.4 oz/A) or one application of Grasp at 2.8 oz/A.

Knotgrass: Knotgrass control was 91 to 95% when treated with Clincher and Newpath. The addition of Command did not impact the control of knotgrass with Clincher and Newpath. The addition of Command increased control of knotgrass by 30 and 37% with Regiment and Grasp applied postemergence, respectively; however, knotgrass control did not exceed 75% with these herbicide programs.

Creeping rivergrass (perennial barnyardgrass): When treated with Clincher and Newpath, creeping rivergrass control was greater than 90% at 49 days after treatment. All other herbicide programs controlled creeping rivergrass 68 to 76% with or without the addition of Command applied PRE.

Water paspalum: Control of water paspalum was 94 to 95% when treated with Clincher and Newpath with or without the addition of Command PRE. Control of water paspalum was 28 to 45% when treated with Regiment or Ricestar with or without the addition of Command PRE; however, control of water paspalum increased from 35 to 75% with Command PRE followed by Grasp postemergence.

Brook paspalum: This is probably the most difficult perennial grass to control in rice production. As with the other three grasses, Clincher and Grasp controlled brook paspalum 76 to 83% with or without the addition of Command. All other programs evaluated controlled brook paspalum less than 50%.

This is a summary of the research that was conducted in 2005. To see the complete weed control annual report, please go to http://www.agronomy.lsu.edu/weedscience/annualreports.asp.

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Darlene M. Regan	Administrative Coordinator
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[1] Resigned 10/13/05.
[2] Resigned 12/31/05.
[3] Appointed 07/18/05.
[4] Appointed 08/15/05.

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[5] Retired 08/06/05.
[6] Appointed 08/01/05.
[7] Appointed 05/15/05.
[8] Appointed 12/19/05.
[9] Appointed 07/28/05; Resigned 10/27/05.

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Cooperating personnel on research projects at the Rice Research Station include the following:

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